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To

MY MOTHER

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AUTHOR'S FOREWORD

A COMPLETE HISTORY OF how the Second Front was planned would run to a million words, and still be incomplete. The present volume is intended to be a bird's-eye view of what happened behind the veil of secrecy which shrouded our planning work in the two years before D-Day.

In thus partially lifting the shroud I am conscious of how little I have recaptured the months of devotion lavished on this unique military operation by thousands of soldiers and civilians unknown to me. It is not possible for any one man to trace all the paths of all the stars in this planning universe.

Least of all have I given credit to three giant standard-bearers, the Royal Navy, Combined Operations Command, and the Royal Air Force. The omission is intentional, because I am too inadequately acquainted with their work to do justice to the task they accomplished. Doubtless, more qualified participants than I will remedy this defect in the fullness of time.

I realise, also, that I have not always dotted the "i" and crossed the "t" when describing the military machine; the limitations of space and readers' forbearance with technical jargon forbade that every fact should be stated.

This volume is, at best, a summary of events.

I have tried, above all, to recapture the mood and sentiments of those who took part in the planning, because this mental outlook played a vast part in making the planning a success.

I have erred, probably, in attempting to simplify the picture, for your better understanding of the mechanics of the operation. It should be realised that this has been done at the expense of omitting the thousand complicating factors which involved the real planning. I have had to exclude countless problems, which were eventually solved, because the recitation of these facts merely added to the difficulty of explaining an already intricate operation.

My grateful thanks are tendered to all those fellow officers who contributed in such a great degree in garnering the material for this account.

JOHN DALGLEISH

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CHAPTER I

SELECTING THE CAST

INVASION PREREQUISITES

ON 4 JUNE, 1940, Winston Churchill told the House of Commons: "Dunkirk is a miracle, but a miracle within a colossal military disaster . . . 335,000 troops have been evacuated . . . we have lost nearly 1,000 guns and all our transport, and suffered 30,000 casualties. . . . But . . . we shall not flag or fail, we shall go on to the end, we shall fight in France, we shall fight on the seas and the oceans, we shall fight with growing confidence and growing strength in the air, we shall defend our island whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills, we shall never surrender, and even if, which I do not for one moment believe, this island, or a large part of it, were subjugated and starving, then our Empire beyond the seas, armed and guarded by the British Fleet, would carry on the struggle, until, in God's good time, the New World, with all its power and might, steps forth to the rescue and liberation of the Old. . . ."

Within one week of that great fighting speech, the first Commandos were formed from independent infantry companies of the British Army. They took up their stations along the South-East Coast. They blacked their faces, replaced their heavy ammunition boots with rubber-soled soft shoes, collected a motley assortment of small craft, and prepared themselves for their initial task of raiding operations against the continental coastline.

While Hitler was assembling his massive invasion armies in the Pas de Calais, the sea-borne pygmies struck. During the night of 23–24 June, 1940, the first Commando raid took place between Cap d'Alprech and Pointe du Hautbanc. It was a small affair, a tiny reconnaissance, sent out to find information about the enemy's dispositions.

This small raid, unimportant in its immediate effect, lifted the country from its feeling of deepest despondency to a mood of thoughtfulness. Shades of Wolfe at Quebec, Craig at Cape Town, George of Hesse-Darmstadt at Gibraltar. Cheeky little Britain, thumbing its nose at the mighty Hun hordes. Just the first murmurings of the summer breeze that, four years later, almost to the day, became the tornado of the Second Front.

This raid not only marked the beginning of offensive raiding parties, it marked the rebirth of the science of Combined Operations, destined to grow into the instrument which would launch the mightiest invasion force ever transported by sea.

Combined Operations Command was formed. It took over the Commandos. Naturally enough, the public surmised that this new command had been formed to plan and execute raids on the enemy coast.

In fact, this was but its secondary task. The primary task of Combined Operations Command is defined in its charter as "to provide training for amphibious warfare". A further responsibility was the production of the machinery necessary for amphibious warfare. What this organisation accomplished is described in a later chapter. Here, it is sufficient to know that the instrument was fashioned. What purpose would it serve?

TO INVADE EUROPE FROM THE WEST! That was the purpose. Whatever transpired in the years between the creation of Combined Operations Command and the launching of the Second Front, all else was a secondary consideration. This was the resolve taken in the black autumn days of 1940.

Now the feat is accomplished it is not easy to think of the task as impossible. Yet in 1940 there were many high military and naval experts who would not list such an amphibious operation in the possible feats of war. Only the supremely confident at the upper end, and the totally ignorant at the lower end, of the scale did not doubt success. Those of us who were in between these limits were filled with misgivings and torments to D-Day and beyond. Many officers employed in planning the invasion confessed haunting, persistent fears that the planning was merely a gigantic bluff, and that we would never attempt to invade western Europe. So, the general public may be forgiven their doubts.

The pattern becomes clearer when the Prime Minister, in his magnificent broadcast of 14 July, 1940 (a month after Dunkirk!), says that we shall begin to turn to the offensive in 1942. Two years later, in November, 1942, the greatest amphibious operation yet launched was carried out, under the command of General Eisenhower, along the shores of North Africa.

Now, recall the situation, in 1940, when these high decisions were taken. . . . Britain stood alone against Germany and Italy;

France had fallen; United States of America were friendly but neutral; Russia stood, armed along her borders, a spectator of the European conflict. The war was not yet global.

The possibility of ill-armed, undermanned Britain ever launching a successful invasion against the French coast appeared to be extremely remote. Yet, had the decision to invade Europe not been taken at that time, the invasion which took place on 6 June, 1944, could not have been carried out for several months longer, probably not before the summer of 1945.

It was not possible, in 1940, to name a precise date for our return to the Continent, but an immediate appreciation of the situation by the General Staff, in conjunction with Combined Operations Command, revealed that there were certain automatic limitations which decided the nature of the invasion, whatever the time and place.

The first limiting factor was the availability of shipping. In fact, shipping was the predominant factor from the inception of the outline plan to D-Day and after. The size of the force which could be launched and maintained in future operations was governed by the shipping available to cope with the task.

The second limiting factor was the availability of military, naval and air force personnel. Already there had been scheduled a maximum ceiling for the armed forces, beyond which it was considered an increase would merely be at the expense of efficiency in some other essential war work.

The third limiting factor was the time it would take to equip a military force sufficiently large to invade Europe successfully.

The decision could be taken, therefore, that the operation would be a short sea voyage invasion against a heavily-defended coast. The number of men taking part, and the amount of shipping which would be required, could be calculated sufficiently accurately to allow planning to proceed. The actual point, or points, at which the landings would be made could be left to future decision, the final assessment to be taken by the Supreme Commander of the force appointed to carry out the invasion.

The invasion, itself, was divisible into three clear-cut phases. The first phase would be to land on the enemy coast and consolidate the beachheads. The second phase would be to disembark a sufficiently large force to repel the large-scale counter-attack which the enemy would inevitably launch. The third phase would be the landing of sufficiently large armies to destroy and rout the total forces which the enemy could muster against us.

This account deals primarily with the first phase only; that phase which entailed all the long, elaborate, hyper-careful, detailed planning, such as never before has been attempted in the whole history of war, and is unlikely ever to be attempted again. It may be true that nothing in this world is unique, in which case the planning of the Second Front falls into the highest possible realms of that category which literary purists will say does not exist, the almost unique.

The decision taken, the task was divided into four spheres of responsibility. Firstly, a Force headquarters was to be formed, whose task was to assemble the invading armies, train them, and in the fullness of time commit them to battle in Europe. Secondly, there was the gigantic task of maintaining the armies with all the implements of war when they were committed to battle; this was called the Maintenance Project, and was accepted as a direct War Office responsibility. Thirdly, there was the secret assembly and accommodation of the invasion force, in this country, prior to embarkation; this task was allotted to the Home Commands. Fourthly, there was the embarkation, conveyance by sea, and disembarkation on the enemy coasts of the invading force; this task was allotted to Combined Operations Command.

Such was the plan, but much depended upon events in the years between. Many incalculable factors could have wrecked the plan irretrievably. If Germany had decided to attack this country instead of turning about and attacking Russia, history might well be in reverse. Had Rommel, in his victorious advance through Egypt, succeeded in driving us from that country, the plan would have been critically endangered, if only from the shipping point of view. In fact, each step was attended by a succession of gigantic queries, but there was no wavering, no change of plan. Whether things were going well or ill for our general cause the plan unfolded steadily, inexorably, and sometimes, it appeared to us, unhurriedly.

Russia entered the war on 22 June, 1941. This event, momentous in its after-effects, made no appreciable difference to the plan. It neither advanced nor retarded D-Day. It was when the invasion was actually launched that the full value of Russia's contribution to the European war was felt. The drawing of many of Germany's finest fighting divisions eastward certainly made our landing and succeeding triumphs easier than they would have been against a German army entirely uncommitted to active warfare.

Even so, the manpower resources of this country were pitifully overtaxed. The various Emergency Acts controlling manpower undoubtedly doubled the value of each man, and a state of efficiency was reached such as astonished the whole world at a later date. Yet, always, the worry was how to produce an army large enough to invade successfully "Festung Europa".

The answer came as one of those swift strokes of fate which always appear to come to the rescue of this island in times of danger—Japan attacked Pearl Harbour on 7 December, 1941! Thus, Britain and the United States became allies overnight. The massive manpower resources of a nation of 120,000,000 people were showered on this tiny country, which had set a ceiling of some 3,000,000 men as the maxium strength of her armed forces.

The entry of the United States into the war was an unmixed blessing for this country, because the United States not only brought manpower by the million, they brought a brotherhood of brains, skill, initiative and drive that infused new life into this country. An additional bounty came when the United States decided to make the war in Europe first priority over the Japanese war.

If I called the entry of the United States into the war an "unmixed blessing" I ask forgiveness of those of my friends who had to plan their reception in this country. Firstly, of course, United States troops took over Iceland from British forces. Then they took over Northern Ireland. Lastly they set up their camps in Great Britain; and what camps they were. The speed with which they erected their prefabricated homes was an eye-opener to us. Camps to hold several thousand men sprang up like mushrooms. However, finding a home for several hundred thousand Americans was only the beginning of the alliance.

The first close contact between the British and American armies is a fascinating study. The two military systems, alike in so many superficial respects, diverged greatly in matters of detail. We found quickly enough that both armies had to give and take; each had to learn the idiosyncrasies of the other's way of doing things.

As soon as we reached details the differences in our organisations were seen to be enormous. Two armies going into war together, even if of the same nation, need co-ordination. Two armies of different nations need something more than mere co-ordination. In the last war, when armies of different nationals fought side by side, it was found wisest not to place troops of one country under the command of the army of another country. Troubles were frequent because of incomplete understanding between the allied nations. Yet, the new United States-British alliance flouted history by planning an integration of armies as though British and American troops were one and the same. This was a courageous decision, and required great willpower and presence of mind to accomplish in fact.

Any illusions that we British had at the outset, that we were going to show the Americans how to do things, while they would follow meekly and unquestioningly behind, were rudely shattered. The United States came in as equal partners, and partners with a mind of their own! We found, indeed, that our military rating was not so very high in America. Memories of the "phoney war" were not yet erased.

Fortunately, we got our ideas to rights in the early days. We found that the Americans were not willing to accept our ideas or equipment just because we said they were good. The American is a realist above everything else. He sees with his own eyes, thinks with his own brain, and acts accordingly. It was quickly evident that the Americans would adopt neither our tactics nor opinions until they had tried them out. It became a stock phrase: "You can't tell an American how to fight wars, he has to find out."

There was, of course, a very realistic background to all this. The Americans had sent observers to the various battlefronts. They had worked out their ideas. They had made prodigious efforts to equip themselves with the finest military equipment in the world. They are proud of that equipment, and unwilling to give up a treasured "piece" until it is proved valueless. Then, an American will discard this obsolete equipment quicker, and with more venom, than a snake will strike at a mongoose. And they will produce an improvisation, or even new equipment, with all the speed and high-powered efficiency for which they are justly famous.

Well, there we had the background. It was not altogether promising on the surface, but we did speak the same language, and we both decided to attain a definite understanding. It was a slow but smooth progress. The civilised politeness of host and guest did much to keep the wheels well oiled. The British went out of their way to make the Americans at home. The Americans trod gingerly, and with no small affection, in their host's home.

Our reception plans naturally began with creature comforts. Special American ration scales were devised. Accommodation was provided on a far more lavish scale than for our own troops. We were given *carte blanche* by the Government to provide the Americans with everything they required. There was no niggardly haggling over details. Our orders were "give them everything they want, if you have it". Mostly, we had it.

This, however, was just the beginning. Next, we had to reach a common military language. American military terms are vastly different from our own. Some terms are downright misleading. A common vocabulary was evolved, a kind of bilingual military dictionary. It was not easy, as neither side was very keen on substituting a "foreign" word for their own carefully-worked-out term. The vocabulary *was* evolved, and so was a special list of military abbreviations, common to both military forces, so that each could understand the other's orders and instructions. Small points, you might think. But not at all. These things are the breath of military life. Without such integration there could have been no understanding between the two nations' armies.

Further links were established by means of joint study courses for British and American officers, and by attaching American personnel to British units, and vice versa.

The surface scratched, questions of more intimate detail were investigated. How could we rationalise equipment so that we had the smallest number of different weapons, and the maximum interchangeability? Progress was made in this direction, but the limitations of time and production, and the natural pride of each army in its own weapons, prevented total integration.

America's contribution to the military equipment of the British Army was immense. Sherman tanks, the ubiquitous jeep, amphibious vehicles, and self-propelled guns come readily to mind. For the Americans' part I think they admired most of all our mobile field bakeries. An American Colonel said to me one day: "Your mobile field bakeries are so much better than ours that it isn't even funny."

Which probably illustrates my next point. Through all the difficulties of welding two distinct armies into one machine, the saving grace of both nations was unquestionably an unquenchable sense of humour. Each nation had also a profound love of freedom. Arrayed against these was an intense national pride, which in nations more arrogant than ourselves would have ruined the whole enterprise in thirty days. Instead of disaster, there grew up a fine, discriminate understanding, while each smiled rather broadly at the other's oddities.

In this entente one man stood head and shoulders above all others. This was General Dwight Eisenhower, the eventual Second Front Supreme Commander. At every opportunity this fine American expressed vehemently his belief that the British and Americans were brothers. This belief he upheld by actions as well as words. Woe betide an American officer who could not get along with his British counterpart. General Eisenhower was ruthless in such cases; the officer was removed. The General expected similar treatment for British officers who could not maintain friendly relations with American officers.

As the English countryside gave birth to small American townships, the tempo quickened, a sense of urgency was abroad . . . the stage was cleared, the cast selected.

CHAPTER II

SETTING THE STAGE

"INVASION PLUS"

CONSIDER THIS "springboard" of invasion in 1940 and 1941. While the unknown back-room boys were formulating their outline plan for the invasion, the country was physically on the defensive. We were in the condition known in military parlance as "Invasion Plus". It was not until 1943 that we officially reached the state of "Invasion Minus", which, of course, was the condition in which it could be said that the danger of invasion was over.

During "Invasion Plus" days the prime duty of the field-force troops in this country was to defend our shores against an invasion by the German armies. Alongside the regular field-force troops stood the L.D.V. (later to become the Home Guard). It is history how these bands of patriots garrisoned towns and villages with little other than courage as weapons. To-day, only a few fast disappearing road-blocks, drunken pylons and rusted rolls of Danert concertina wire, remain as reminders of months of unremitting toil, arduous, thankless work that girded this island with a thin perimeter of defences. For nearly two years regular and volunteer soldiers carried out the task of converting this country into a giant barracks, arsenal and citadel, all rolled into one. Americans called it "the unsinkable aircraft-carrier".

Now, both the Home Guard and the L.D.V. are memories. Superficially it might be said that their training and energies went for naught. That is probably their own opinion, too. No greater injustice could be perpetrated. It is hard to see how the invasion of Europe could have been attempted without the Home Guard. Let me explain why. It is a simple story, but one not readily apparent.

I have already said that the prime duty of the field-force in 1940 and 1941 was to defend this country against invasion. What sort of invasion did we expect? How did we dispose our troops? Here, in brief outline, was our defence plan.

The invasion was expected to take certain classic lines of development. The initial attack would undoubtedly be heavy air attacks. (The Battle of Britain, in fact.) Once mastery of the air was achieved, it was surmised, the Germans would launch large bodies of airborne troops to seize vital communication centres behind the beaches on which they intended to land their major land forces. These beaches, we calculated, would be somewhere between the Wash and Southampton. Landings would probably be made both north and south of London with the aim of cutting off the capital from the remainder of the country.

There was the reasoning. How did we plan to meet these attacks? Well, firstly we concentrated most of our mobile field-force troops in East Anglia, Kent, Sussex and Surrey. Armoured formations, such as they were, were held farther inland.

The defence plans, based on these dispositions, were roughly that the troops stationed on the coastline would fight to the last man and the last round; there would be no retreat. The Home Guard, backed by regular cadres at certain vital communication centres, would then take the brunt of the attack by any forces that overpowered our coast defences. In fact, this second line of defence was almost entirely Home Guard, because the regular troops would be held in reserve for the counter-attack which we would deliver at a suitable time and place. In each area there was a "Stop Line", the line beyond which there would be no retirement. On that line we stood or fell.

I mention this plan because it is necessary to see the value of the Home Guard work. Battle stations for Home Guards meant their home towns and countryside. Their main task was to deny the enemy a right of way, to impede his progress by forcing him to halt and give battle, or deviate along less accessible roads and country tracks.

We all know that the Home Guard was not required to go to battle stations, but by their very presence they allowed the field-force formations to live and train in one area, and thus build themselves up for our own invasion. Without the Home Guard, divisions would have been split up into small fighting groups over half of the towns and villages of England; training would have been impossible. It is difficult to see how our armies could ever have been made fit for war under such conditions.

And that is, I feel, the debt this country owes to the Home

Guard. Perhaps this revelation might make those long, cold hours of guard duty or training seem less irksome and more worthwhile. I hope so, because the Home Guard was a vital part of our military machine; more vital than they themselves knew.

I make no apologies for this digression, because it helps to complete the mosaic we are now putting together. I have said the *prime* duty of the field-force troops was to defend our shores. But another duty was laid upon them. The needs of the future were never forgotten, and training had to be undertaken to prepare our troops for our own D-Day. To realise the measure of the task accomplished by our troops, in whose numbers Canadians ranked increasingly, it is necessary to summarise the happenings of this period.

In the diagram opposite I have shown the organisation of the Home Army in 1941 and 1942. It has remained unchanged until recently, when, after D-Day, the wartime-created South Eastern Command was closed down and amalgamated with its original parent, Eastern Command.

You will see in this diagram how the chain of command comes down from War Office, through Commands, to Corps Districts or Districts, and then down the scale to Areas, Sub-Districts and Sub-Areas. You will also notice, somewhat on one side, General Headquarters, Home Forces, about which I have a great deal to say later.

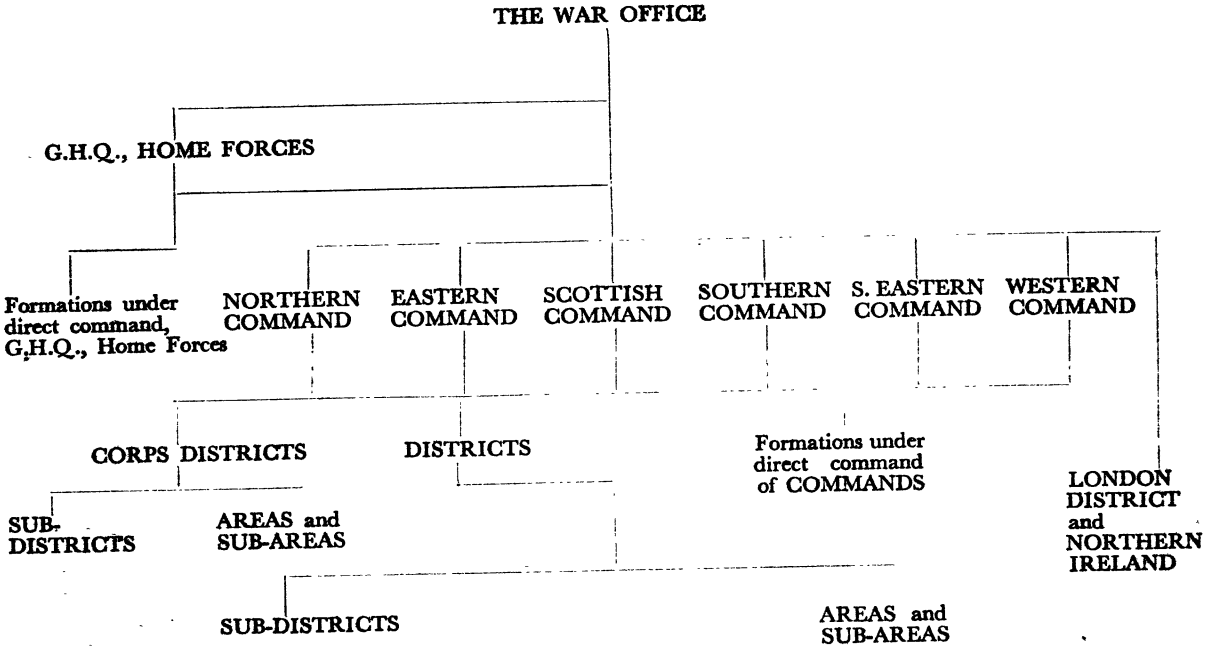
For the moment I want to give you a bird's-eye view of this country in 1940, 1941 and 1942.

The War Office needs no description. The Home Commands need considerable explanation. In peace and war this country is divided into Commands. Each Command is a particular geographical area of Great Britain and Northern Ireland, and is commanded by a General Officer, Commanding-in-Chief. This officer is usually a General or a Lieutenant-General. He is frequently referred to as the Army Commander. In fact, one Command, South Eastern, dropped the use of the title South Eastern Command and substituted South Eastern Army, at one period.

The Army Commander is in command and control of all troops in his Command. He is also responsible for the defence of the area under his command. He must provide food, accommodation, weapons and ammunition, and all creature comforts for all the troops under his command, and also for certain troops which, while living in his area, are under direct command of War Office or G.H.Q. Home Forces.

Each Command has a certain number of Districts. A District

MILITARY ORGANISATION OF BRITAIN—1941–1942



Note: This diagram is NOT exhaustive, but is intended to convey the general framework of the organisation. Each Command had a different make-up, but the Chain of Command as shown above applied equally to all. LONDON DISTRICT and NORTHERN IRELAND DISTRICT were independent of Commands, and came directly under the War Office.

is commanded by a District Commander (normally a Major-General). He in turn commands a number of Sub-Districts, Areas, Sub-Areas and Garrisons. It is all a very logical chain of command.

That is, it *was* a logical chain of command. It was based upon many years' experience, but one thing had never been allowed for. That was the permanent stationing of a large number of field-force troops within the Commands.

Naturally enough, after Dunkirk, anomalies began to occur immediately divisions and corps were accommodated in the southern part of the country. The outstanding difficulty was an operational problem. Take Kent District, in South Eastern Command. The District Commander was a Major-General. He was charged with the defence of his District. Within that District, however, lived two field-force corps, each commanded by a Lieutenant-General, and each charged with a certain operational role. Now, here was a pretty pickle! By all military standards the District Commander was in command of his District. But he was inferior in rank to both corps commanders, and probably unfitted to command a corps in battle, anyway.

There were other anomalies, but this was the most outstanding. It required a solution, and none was forthcoming within the existing lay-out of the Home Army organisation.

Accordingly, a committee was established, under the chairmanship of General Sir Humphrey Gale, one of the keenest administrative brains in the British Army. In a lightning tour of the Home Commands General Gale sized up the problem, and produced a solution which proved to be a brilliant example of British compromise. At the time it received great criticism, because it gave no clear-cut advantage to either field-force or static commanders! There was, of course, no clear-cut solution possible. It was a case of making the best of a bad job, and the solution eventually worked admirably.

Briefly, it was to knit the field-force formations into the normal static lay-out. It meant that field-force commanders had to accept responsibilities for the administration of static installations, normally far beyond their ken. It meant that Army commanders were given a gigantic responsibility to command tens of thousands of field-force troops. But it worked.

The basis of the reorganisation was the Corps District, which was a combination of the old geographical static district and a field-force corps. If a field-force corps lived in, say, Kent District, then the district was renamed, say, 12 Corps District, and the Corps Commander became the District Commander. He assumed command of all troops in the district, whether they belonged to his field-force corps or not. He was responsible for ammunition depots, supply depots, hospitals and the other hundred and one military installations which we call "static". He had to train all the Home Guard in his district. He had to liaise with the civilian regional control and other civilian bodies.

All these new administrative responsibilities placed a heavy strain on the corps headquarters machine. Remember, a field-force corps consists of some 60,000 men, divided into three divisions plus supporting troops, and is designed to fight a battle in the field. There is nothing in its make-up which lends itself to conversion into a static administrative machine. But the conversion was effected. As a safeguard against the corps having to "up-sticks" and leave the area, a small static headquarters staff was added to the normal corps headquarters. This staff would stay behind when the corps moved off, and would ensure a continuity of administration.

Altogether, this form of joint administrative and operational control, vested in the field-force, was an enormous success. Probably the greatest single benefit which accrued was the constant realisation forced upon Corps and Army commanders of the vital importance of administration to an army in the field.

In battle, the operational side has always tended to dwarf the administrative side. This is natural, as operations are public and demonstrative while administration is accepted as normal routine, unless things go wrong! Still, it is easy to see that when troops are committed to battle the time and energies of the Corps Commander are fully occupied with operational problems, and his acquaintance with administrative problems is usually confined to making demands upon his administrative staff, and expecting them to be met.

If this might appear a too cramped and confined portrait of the outlook of the British Corps Commander in the early days of the war, think back to the surprised and flamboyant burst of publicity which characterised administrative accomplishments in the swift-moving desert campaigns of 1941 and 1942.

This emphasis on administration was never made in the last Great War, nor in the early part of this war. Administration was just something that everyone accepted; like Topsy, it just growed. The curriculum of the peace-time and early war-time Staff College Course devoted only a few hours to the administrative side of military organisation. Latterly, the study of the administrative machine has been increased to one-third of the full curriculum, which is probably sufficient comment.

To-day, administration is receiving greater recognition than it has ever before experienced. One reads that the speed of a campaign is controlled by the flexibility and speed of the administrative machine serving the fighting soldiers. The operational side of war, with its tactical complexities, has slipped from its pedestal, the mysticism torn away, and is reduced to such mundane administrative matters as manpower, welfare, morale, fire-power, the concentration of superior forces and so on. Commanders now know that by committing a certain force at point "X" the result will be a definitely ascribable quantity multiplied or divided according to the efficiency and capabilities of the administrative machine.

This is indeed a revolution in warfare. It reduces tactics to a minor, although still important, rolé. It must always be remembered, however, that the final decision rests with the fighting soldier.

To-day, the once-heady Napoleonic world of minor tactics is as dead as a dodo. In Napoleonic days, when administration was portrayed by a few hand-carts or bullock-carts, while the French poilu marched with sixty days' food tied around his waist, the worship of tactics was understandable. Now, these tactics are replaced by the massive strategy of swiftly moving a million men, followed by a "baggage train" of unbelievable dimensions straddled behind.

The old story of the tail wagging the dog has come to life; for this gigantic administrative tail is, in fact, wagging the military operational machine. No minor brilliance in the field can stand against the solid, dynamic force of a million-men steamroller.

This is undoubted truth, although only recently proven. Courage cannot stand indefinitely against superior fire-power. Arms and equipment, coupled with man-power and mobility, are the handmaidens of to-day's tactics, and without them a commander is defeated, even before his troops are committed to battle.

As one who has had the undiluted joy of listening to Field-Marshal Montgomery on higher operations, I have been able to appraise at their true worth the proud, apparently boastful words with which he has heralded each new triumph. It was no wild hope that prompted him to predict success at the Battle of Alamein. It was no idle talk when he said that he would never commit his troops to battle until he *knew* he would win. No, he did know that he would win, but his prognostications had nothing to do with the field of tactics to be developed during the actual battle. Rather was it his intimate knowledge of, and respect for, the administrative machine. Field-Marshal Montgomery measures success or failure by irrefutable military logistics. ("Logistics" is an American word meaning a combination of facts and statistics.)

Many officers say that Field-Marshal Montgomery developed his appreciation of the administrative machine when he commanded 12 Corps District, in south-eastern England, in 1940 and 1941. In those dark days his Corps District was nearest of any to France and the enemy. Then he strode through Kent like a beacon, challenging the weak hearts and altogether building up an unforgettable morale.

It is hard to imagine that the dull, apparently purposeless days of 1940 and 1941 can have given us an insight into military genius, yet nearly all the Corps District commanders of those days have risen to new heights in actual battle.

The waiting soldiers obtained many other advantages from the semi-peaceful atmosphere in which they lived before D-Day. Not least was the endowment of patience, taught during the long years of waiting.

One other factor stands high in the list of achievements. This was the institution and development of Battle Schools. The Battle School was the invention of General F. Anderson, then G.O.C.-in-C., Eastern Command. Later, General Anderson became commander of the British First Army, which won its spurs so brilliantly in the North African campaign, in 1942.

Everyone will remember the public outcry when the military authorities ordered the evacuation of civilians from a large area of East Anglia. Many people just shrugged their shoulders and considered that this area must be the place where we expected the Germans to invade. Others were more vociferous, and protests against the military action were raised in local councils, newspapers, and even in the House of Commons. One protestant declared that this was one more example of "outrageous bureaucracy".

Actually the area was needed for General Anderson's first Battle School. In this area the actual conditions of battle were to be simulated. Live ammunition was to be fired at trainees; not, of course, to hit them, although accidents did happen from time to time. Artillery concentrations were laid down and registered in one-time peaceful villages. Infantrymen performed feats of dexterity and endurance such as they never believed possible of themselves. Little did the natives of this part of England realise that their sacrifices would one day save the lives of thousands of their sons and husbands.

Now the Battle Schools are silent areas except for the odd crack of some twelve-bore sporting gun disturbing the winter skies. Here, where English, Scots, Welsh and Irish ran and jumped, crawled and scrambled through endless belts of wire, scaled and lowered themselves down twelve-feet-high walls, swung over ravines on two ropes, slipped like moles through five feet of water, while machine guns rattled and mines thumped skywards, and the national cries rose even above the noise of battle in weird savage wailings, there is now only silence.

The deserted countryside stands like a giant motionless memorial to one of the greatest examples of military ingenuity devised in any war. Yes, General Anderson, and his Battle School, contributed more to the success of the Second Front than any other single factor.

Many other Battle Schools were opened in other parts of Great Britain. The hills and lochs of Scotland, and the mountains of Wales vied with each other to produce new tortures for the sorely-tried human frames in khaki. All played their part in despatching the British invasion forces overseas in the pink of condition, and trained to the last ounce.

The Americans were not slow to follow suit, when once they saw the value of these schools. You will remember that part of the West Country was evacuated for a Battle School, just as the original area of East Anglia was emptied. Across the Atlantic, Battle Schools were opened in quick succession, and the American Armies became battle-trained without leaving their homeland.

Even the Home Guard had their Battle Schools. Ask them what they think of them.

Many soldiers who have returned from the Continent say that the hell of training was much worse than actual battle conditions.

Army Commanders, like Corps Commanders, found the time of waiting to be a period of intense training, and educative in many ways. Apart from General Anderson, there were other Army Commanders who became outstanding leaders in the field. Field-Marshal Alexander was once G.O.C.-in-C., Southern Command, Field-Marshal Montgomery assumed command of South Eastern Command when promoted from Corps Commander. The stories of these two men are too well known to bear repetition.

Now we come to the least-heralded and probably least understood headquarters in Britain—General Headquarters, Home Forces. This H.Q. was formed to control the Home Army in battle, should war come to this country. You might ask why the War Office could not control these operations. Well, the War Office is essentially an administrative, and not an operational, machine. While all operations are initially devised in the War Office operational branches, they have no facilities for the actual conduct of operations. Therefore, to meet the deficiency, G.H.Q., Home Forces was created.

Technically, G.H.Q., Home Forces only assumed control when operations became imminent. Assumption of command was to be announced by the issue of the order "Stand To" or "Action Stations". The original intention, therefore, was that G.H.Q. would remain a more or less "underground" organisation until called upon to exercise powers of operational command.

Gradually, however, G.H.Q. became a much greater power than originally envisaged. Soon they were controlling training of field-force troops, massive field exercises and the development of tactics and weapons. They became the testing ground of new ideas and new equipment.

In this direction, the work of General Paget, for so long G.O.C.-in-C., Home Forces, has gained little enough public recognition as yet. His drive and unceasing search for improvements played a great part in the sweeping successes which were to follow in France and the Low Countries. His reward appeared to have come when he was given command of the newly-formed 21 Army Group, but before the Army Group was committed to battle Field-Marshal Montgomery was given command, and General Paget left for a high command in the Middle East.

But to return to 1942, when Britain was humming with the sound of large-scale exercises throughout the length and breadth of the land, exercises which grew in scope until whole armies were launched against each other in mock battle, the scene of operations encompassing half of England and Scotland at one time. These exercises were the prelude to battle. Their success was due to the untiring energy of General Paget. Many a commander was weeded out as inefficient because of his failure in the large exercises; others were promoted because of equally distinctive brilliance. Each exercise was greeted with a plethora of asides about "a new issue of bowler hats", this being the Army way of saying one's services are no longer required. And from the apparently meaningless meanderings of troops in the leafy, quiet lanes of Britain, a team was created.

Some of the major exercises come readily to mind. This short explanation of what they meant might bring balm to the hundreds of thousands of soldiers who took part in them, and considered that the exercises had been designed purely and simply to "muck them about".

1941—Exercise Bumper. This was an exercise designed to test our defence dispositions against an invading German force. An auxiliary purpose was to learn as much as possible about our own drill of deployment of armoured forces. The highlight of the exercise was undoubtedly the northwards dash of a Canadian armoured formation from Surrey to Berkshire. Anyone who, like myself, had to drive against their convoys will pay tribute to the "blitzkrieg" methods! Another highlight was the penetration of a "German" armoured car, which, having "landed" at Harwich, arrived in Torquay two days later, breaking clean through all the British defences in the forty-eight hours non-stop dash. Valuable lessons were learned in the methods of maintaining armoured divisions in the field.

1942—Large-scale exercises were curtailed in this year, because of the shortage of petrol and rubber. The fact that the higher training of the Army was impeded by these restrictions shows how seriously the U-boat campaign had theatened our very existence. It shows, also, the dire effects of Japanese conquests in the Far East.

1943—Exercise Spartan. In this exercise it was presumed that the First British Army had made a successful landing on the Continent, and that the British Second Army had been given the task of conducting mobile operations against a strong German group of armies. (Note the change of intention; now offensive and no longer defensive.) The exercise was not a pronounced success from the point of view of mobile operations, for the German Commander (General Gammell) resorted to such widespread demolitions and mining that virtually no contact was made between the opposing armies. The British Army, commanded by General McNaughton, made great efforts to break through the German demolition belt, but failed. The British interpretation of the armoured situation also came in for much criticism. General Gammell brought off a masterpiece of camouflage by building a dummy armoured formation towards the west of his line. The British discovered the formation, and presuming it to be a genuine armoured force, devised their own armoured thrusts accordingly. What the result of this wrong interpretation of the enemy's dispositions would have been is pure conjecture now, but it would probably have been disastrous for our forces. More "scalps" fell. This was the last large-scale exercise solely confined to land operations.

1944—Exercises took on an amphibious nature, and were christened according to whether troops and equipment were embarked or not. Smaller-scale exercises culminated in an exercise, held in Wales, designed to try out our invasion landing drill, and the setting up of our administrative installations in enemy territory. This exercise was a great success. We saw equipment never before tried out. Prefabricated petrol installations and cold-storage plants were two outstanding wonders of modern military equipment.

There we have a very general picture of the way in which our invasion forces were trained. It is by no means exhaustive. The planned building-up of exercises from platoon to company, company to battalion, battalion to brigade, brigade to division, division to corps, and corps to army has been omitted. It is enough to know that each large-scale exercise was merely the sequel to many months of intensive training at the lower levels.

Lest my words give the impression that matters strode smoothly from point to point, let me disillusion you. Words cannot traverse all the crescive paths of the very complex military organisation that existed in Britain in those days. There were times when formations were drafted overseas hurriedly—the example of the 1st Armoured Division being sent to the Middle East is a case in point—and General Paget had to issue a warning to the higher authorities that the defences of Britain were being stripped dangerously thin, and that if further drafts were sent overseas he could not guarantee the safety of this country!

Again and again, giant holes were torn into our defences, and had to be as quickly plugged. Each move and countermove meant the loss of valuable training time.

Then there was the vital question of equipment. With the demands of the whole world pouring into the War Office, each asking for much more than was available, the demands of Home Forces had a pretty low priority against active theatres of war such as the Middle East, Burma, Australia, India and other theatres not immediately threatened by the enemy, but in urgent need of equipment, nevertheless. Training demanded equipment; there was never enough to go round. Staff officers and commanders spent sleepless nights trying to share out equably the available equipment. Improvisations were made to fantastic lengths.

These were some of the major problems; for every one there were a thousand minor problems. Some will arise in later chapters; the remainder were too insignificant to be recorded, but, in their day, were real and important enough.

Now, we have completed our lightning tour round embattled Britain. We have seen the players assembled behind the curtain . . . the stage is set.

CHAPTER III

BEHIND THE SCENES

PREPARATION OF THE FORCES FOR OVERSEAS DUTIES

THIS CHAPTER DEALS with the War Office responsibility for launching the massive group of invasion armies across the Channel. It is difficult to define the limits of War Office responsibility, as there were many exceptions to each general rule. In outline, however, a rough division can be made into three time phases for the operation, the War Office being responsible for certain duties within each phase.

The first phase was the preparation of the force for overseas. This meant the equipment of the British and Allied forces (other than American) with men, weapons, vehicles and other impedimenta of battle. The second phase was the actual movement of the men and equipment across the sea to land on the enemy shore. The third phase, which, of course, is still going on, was to maintain the force once established in France.

It can be seen that none of these phases is clear-cut in time sequence. Overlappings occurred, as they were bound to occur. For instance, the equipment of the force with new weapons for their initial assault is merely an extension of the replacement of those weapons which is still continuing. The despatch of stores simultaneously with the force landings is, similarly, merely an extension of the present stores shipment.

Briefly, however, the War Office responsibility may be defined thus. In the first phase the War Office had to provide the whole of the British and Allied Force (less Americans) and equip that force with sufficient arms and material to perform their task. In the second phase the War Office were responsible for the Movement programme (in conjunction with the Navy) to move the troops overseas. Simultaneously, the War Office had to organise stores movement to maintain the force when in battle. In the third phase the War Office assumed their normal responsibilities of maintaining the field-forces with what they required. Once the peculiar convulsions associated with launching the Second Front had been controlled, matters reverted to normal.

Parallel with the War Office was E.T.O.U.S.A. (European Theatre of Operations, United States Army). This body was responsible for the organisation of the American armies taking part, and was, in fact, a miniature Washington, transplanted in London.

I do not intend to delve deeply into the second and third phases, which are rather beyond the scope of this account. It is the first phase—the initial preparation of the forces—with which we are concerned.

It is a story of romance and heartbreak such as the grey walls of the War Office can have seen but rarely. It is a story which cannot even now be told fully. Enough can be said to give a good idea of the complexities of the problem and the manner in which certain problems were overcome.

The first enemy of all planning is secrecy. This was never more evident than in Second Front planning, and nowhere more felt than in the War Office, where plans have to be laid years before the action can be seen.

Those amateur strategists who discover last-minute cures for all ailments should take a trip with us through the tangled skein of the War Office, and appreciate why there is such a time lag between the conception and the realisation of a single plan. Shortly, we will make the trip and see for ourselves anyway.

When serious planning—and by planning I mean preparing for the provision of everything needed—for the Second Front operation began, it was the early part of 1942. We should take a look around the world at that time to put things in their proper perspective. What do we see? The Japanese are moving from triumph to triumph in Asia and the Pacific Ocean. The Germans are smashing their way through Africa. The massive American armies have not yet poured into Britain in very large numbers.

The only reminder of the Second Front is the opening of the H.Q. to become, in the fullness of time, 21 Army Group H.Q. This H.Q. actually had a number, such as is given to all special forces when they are being formed for a particular role and it is necessary to conceal the purpose of that force. The H.Q. is located in Scotland, it is small, and its formation is almost unnoticed in the welter of world happenings.

Not a very propitious opening to the greatest amphibious operation of all time! Yet planning had to go ahead at once. The date and place of the opening of the Second Front was a closely guarded secret. Only such information as was needed to complete their immediate tasks was given to the staff officers engaged in providing the equipment; and there is always a vast difference of opinion, about what constitutes "sufficient information", between senior officers who have to impart the information and junior officers who have to act on it. How many headaches have been caused by those simple words which bedeck all highly secret information: "The recipient of this document will impart only such information to his subordinates as is necessary for the performance of their duties." Fortunately there is a wide variation in human natures, and by close liaison with one's colleagues it was usually possible to piece together a fairly complete picture from the words of wisdom dropped by our various superior officers.

I was at the War Office at this time. Two of my closest friends were appointed to the Second Front H.Q., and consequently I was able to appreciate the eventual importance of that H.Q. rather more than my colleagues. The small planning staff at this H.Q. had two stalwart supports in Combined Operations and Home Forces, both headquarters sending their staff officers in streams to the War Office, importuning us for this and that, sometimes with success. Also growing into maturity was the first of our airborne formations.

In this spring, 1942, the Assistant Chief of the General Staff, responsible for General Staff equipment policy, visited the United States, and returned with a number of "futures" which created a great stir in the War Office. He had completed negotiations for the delivery of amphibious vehicles, self-propelled guns mounted on tank chassis, and other types of armament then unknown on the battlefield. The quantities offered by the United States Government were so large that we quite frankly goggled at the figures. All our appreciations were carefully worded to suggest that we would be wise to be sceptical about the receipt of the large quantities promised. Our scepticism was unfounded, for more than promises were fulfilled. In extenuation of our mental outlook, it must be said that we had been so short of so much for so long, we were always living from hand to mouth, that the thought of sufficiency was not believable. On my desk stood a copy of a saying by my Staff College Commandant, in his opening talk to us. It said: "There is never enough of anything in war—except trouble; improvisation is necessary all the time. You will be wise never to let this out of your mind." In 1942 I could agree with him heartily. Almost everything worthwhile was on a priority basis. Materials in short supply were normally placed in a schedule known as War Office Controlled Stores. This schedule grew steadily as the war progressed, and each item could only be released to users by direct War Office orders.

What sort of things were in short supply? There were arms of all descriptions, many types of ammunition, tanks, lorries, cars, optical equipment, compasses, binoculars, wireless sets and a hundred other essentials.

And this is where we should take a look at the War Office as it really is, and not as portrayed in the uninformed vapourings of so many people. Quite frequently one hears people talking about the War Office as though it was some kind of omnipotent God, demanding and receiving what is demanded in full coin with no more effort than a stroke of the pen. There is no Aladdin's lamp in Whitehall. The picture is distorted beyond any recognition.

Here is the real situation. The War Office is merely *one* consumer among many. Very early in the war the War Office powers of purchase and contract were taken over by various civil ministries, such as the Ministry of Supply and the Ministry of Food.

Suppose we decide that the War Office requires a new type of vehicle. Come along and see how they eventually receive it.

Firstly, the General Staff work out a specification, which says what they want the vehicle to do. It must be able to travel at a certain speed, have a certain minimum cross-country performance, lift a certain weight, accommodate a certain number of passengers, be designed to carry certain loads. In other words, a fairly general statement as to what the War Office want this vehicle to do.

This specification is converted into blue-prints by the War Office Mechanical Engineering branch, and the plans submitted to the Ministry of Supply. This Ministry requires to know how many of these vehicles are needed, and when are they needed.

Consultations follow. The Ministry of Supply may suggest that as the vehicle is rather like a vehicle already in production, could the new vehicle not be modified to agree in broad principle with the present type? This will save the production from one factory for six months, as it will take six months to re-equip the production line to manufacture the new vehicle. Jigs and tools will all have to be changed.

When agreement is reached the Ministry of Supply produce a mock-up (a mock-up being an approximate example of what the finished product will be like). This approved, a prototype is produced. This undergoes extensive trials to ensure that it meets the specification. The trials concluded satisfactorily, then production can begin. All this takes time, probably a year or more in good conditions. But when production lines are at a premium, as they have been always in this country, and when the speed of war renders a design obsolete before it is in production, the time lag can easily extend to two years.

That is the example of a vehicle required particularly for the Army. Now take the example of a vehicle which is common to all services, say, a standard three-ton lorry. Production of this vehicle is going on simultaneously in England, the United States and Canada. Each month the probable assets are calculated and placed before the London Munitions Assignment Board. At this board are representatives from all the Dominions, the United States, the British Army, Navy and Air Force, and National Defence Services. Bids have already been made by all concerned. The bids are always much greater than the assets, and once again the system of priorities has to be operated. The War Office may well claim 10,000 vehicles and receive 1,000 only.

Apart from this stranglehold on free progress, there were other restrictions. There was the shortage of rubber. The allotment of rubber to the War Office, in 1942, was 10,000 tons. This was consumed within nine months, and a supplementary allocation had to be requested. The threat of inadequate rubber supplies was sufficient to divert attention to the development of half-tracked and fully-tracked vehicles. A half-tracked vehicle is a vehicle which would normally have wheels, but has the rear wheels replaced by tracks, similar to tank tracks. A fully-tracked vehicle has all wheels replaced by caterpillar tracks.

You may have noticed some vehicles of this description passing through this country on the way to the Continent. Well, the peculiar design was not always due to an attempt to improve the vehicle's performance; sometimes it was due to a necessity to conserve rubber supplies.

This same rubber shortage diverted many fine engineering brains to experiments with spring wheels, metal wheels with spring spokes and bands which would absorb the road shocks in similar fashion to the rubber tyre. Other experiments were carried out with leather treads.

Some time before this shortage we had perfected a run-flat tyre, one which even when punctured would bring the vehicle safely home for fifty to seventy-five miles, without injury to the wheel. This was a magnificent addition to our war material. Many valuable equipments were rescued which otherwise might have had to be abandoned. Yet, in 1942, the use of these tyres had to be severely restricted because they needed 75 per cent more rubber in their manufacture than ordinary tyres of the same size.

All these experiments and improvisations were a serious handicap. They ate up valuable man-hours and materials, and diverted first-class brains from their normal researches. The first military commandment forbids the dissipation of energy away from the main object; yet here, at the supreme military headquarters, one had to watch this dissipation, daily, and stand by powerless to prevent it.

This is a rough insight into the War Office. It is essential to get these facts into the correct perspective. Now what did the War Office have to provide?

We have seen already how the War Office is responsible for equipping and maintaining our armies in the field. The equipment of the Second Front armies with only their normal impedimenta of war was a large enough task to daunt any organisation, especially as the long-term planners could see that equipment held by the force in 1942 would be unfitted for overseas service by the time the invasion was launched, and would certainly require almost total replacement.

But, in addition to this normal provision, the peculiarities of this projected amphibious operation required equipment not yet in existence, and in many cases not yet even conceived.

One of the first requirements was for the supply of lifting discs, to be used to hoist vehicles from Motor Transport ships into landing craft, or directly on to quays. Various methods of lifting were tried, and the decision reached that the best method was to fit discs to vehicle hubs and sling lifting ropes around them. It was estimated that probably 100,000 vehicles would require these lifting discs.

Then the snags began. Which vehicles would be used in the invasion? Each different make of vehicle required a specially-designed disc to fit the wheel construction. What vehicles would be in issue in 1944, when the invasion was scheduled to take place? (Not that we knew this date, at that time.)

One suggestion was to make lifting discs a standard item of equipment on all field-force vehicles. This meant more than one million discs would have to be provided. Eventually, wiser counsels prevailed, and, the principle having been agreed, provision was left until a later date.

One of the earliest problems, probably the most important problem of all, and one destined to be with us right up to D-Day, was the question of waterproofing vehicles. Waterproofing was necessary to permit vehicles and tanks to "wade" ashore from landing craft, through some considerable depth of water, and then to carry on their normal tasks on land. The first requirement was that vehicles should be waterproofed to "wade" through eighteen inches of water. But before perfection was reached the requirement was raised to three feet of water, and finally to four feet six inches of water. Each new requirement brought a host of attendant problems, as more and more parts of the vehicle were submerged.

An additional complication was that any waterproofing had to be easily dismantled so that the vehicle could carry on with its ordinary land role immediately after landing. This called for a great deal of ingenuity. Naturally, to submerge vehicles meant stopping up certain breathers in the engine system, brake system, and other parts of the vehicle. If these breathers remained sealed for many minutes then overheating ensued and the engine seized up.

Not a very pleasant problem, but it was tackled keenly at Appledore, and in the Scottish lochs. Once again shortage of supplies of waterproofing materials did nothing to assist. There were occasions when materials had to be rushed from an inland ordnance depot to Appledore, by road, overnight, so that trials could be carried out the following day.

Waterproofing was a problem-child, right to the very last. It caused many scares, and the limitations in the performance of waterproofed vehicles controlled many details of the eventual invasion lay-out. Very near to D-Day waterproofing caused the abandonment of several "invasion" camps, on which considerable sums of money and much labour had been expended, because these camps were just outside the new radius allowed for waterproofed vehicles to travel to the ports of embarkation.

An enormous responsibility was placed on those entrusted with devising a workable system of waterproofing. Waterproofing was the greatest single factor which could decide success or failure in the original landings. Success proved the experts to be right, but oh! what a worry it was. I remember well the last big scare it gave us only a few days before D-Day. We were watching an embarkation rehearsal. Tank landing craft were being filled with tanks—six to each craft—when the sixth tank stopped just as it was climbing the ramp to complete the load of one craft. Nothing would move it, and the engine was seized up very firmly.

The trouble was traced to the waterproofing, but as the method and application was the same for this tank as for all the others, the breakdown was a complete mystery. At last investigations brought out the cause of the trouble, and what a shock it was. You see, the six tanks had all travelled the same distance, well within the limits of the waterproofing, when they fetched up alongside the hard. One by one the tanks nosed their way into the bowels of the craft. Then came the sixth, and the engine seized up. Why? Because the engine had been kept running all the time the other five were loading, and the life of the waterproofing had been exceeded!

Simple enough, you might say, but in the excitement of embarking on the greatest adventure in any man's life, the driver of a tank could be forgiven for failing to notice that he was exceeding the permissible engine-running time while waiting to embark. Now picture the situation if the seizure had taken place as the tank was leaving on the other side. It would have jammed on the ramp, and the other five tanks would have been trapped in the craft, at the mercy of enemy gunfire.

That was the picture we carried away that day. The fate of the whole world could have hung on waterproofing, and in us, certainly, this episode produced so much misgiving that we frantically re-examined all the points concerning waterproofing in case some other point had been overlooked.

The point, at this stage, is that waterproofing was a War Office responsibility.

The special requirements of the operation called for food packs not normally supplied. It was one thing embarking troops for a long sea voyage in a troopship, with kitchens and food stores provided. It was a vastly different proposition sending troops off in small landing craft, with no galley facilities, for a sea journey of from twelve to twenty-four hours.

The food problem could have been eased if the powers had agreed to a certain amount of roughing it for the troops taking part. Alas, for the planners, no such attitude could be considered. In fact, the reverse applied. The troops had to be mollycoddled across the water. They had to land in the pink of condition, well fed and rested. All the roughing-it they would endure would be on the other side of the water.

In other chapters I have described the feeding arrangements in more detail. Here it is enough to mention just a few of the contretemps. There was the case of the 24-hour ration pack. Each man had to have two of these, and live on them for his first forty-eight hours in France. We had millions of these manufactured. They were a miracle of compression and calories, but at the last moment the special needs of the assault forces were such that one of the 24-hour packs had to be compressed even farther, so that it could fit into the men's mess tins. The requirement? Just a quarter of a million.

It is said that numbers can mean anything, but in planning this operation numbers were very real things. Changes were not easy to effect at a late stage. Loose thinking in the early stages of planning produced painful consequences on occasions. A new idea, towards D-Day, was a serious matter. Any change meant producing half a million articles, sometimes indeed as many as twenty million articles.

The production of half a million trouser buttons, additional to normal supply, is a large problem in a country where production is as finely controlled as in Britain. Imagine, then, an overnight call for half a million complete sets of underclothing or battledresses. The thought is spectacular, yet these contretemps did arise, and were overcome too.

Not all problems were confined to the production of special articles. I have just mentioned the case of the midget 24-hour pack. Well, contretemps often arose in reverse. One such case concerned this 24-hour pack. It happened just before D-Day. One of the most famous British corps, fresh from Italy, having previously borne the brunt of the Middle East fighting, took up its location near the jumping-off points for the invasion. This assault was to be the third undertaken by the corps, and anything they had to say about how things should be done was naturally worth hearing. It happened, accordingly, that a staff officer from this corps rolled into my office one day and began a heated discussion on the lack of value in the 24-hour pack. He pointed out that tank crews, hands all covered with grease from de-waterproofing, could hardly crumble up the compressed, de-hydrated meat-block with their fingers, as suggested in the instructions. Furthermore, he disliked the "pansy" make-up.

"Give me a couple of tins of bully beef, and you can keep this lot," he said.

Much shaken, I agreed with his suggestion, and then found that this corps had represented their objections through other channels as well. There was a rare how-do-you-do for about two days while everyone argued the pros and cons of the 24-hour pack. Finally, sanity won the day, and it was decided to go on with the issue of the packs. Subsequent history more than justified this course, and I believe the tank crews liked it as much as any other soldiers!

Laundry might not seem a particularly difficult question, even with the delays in civilian life. To an army poised for the greatest assault in history, shrouded in secrecy, laundry was of paramount importance, and a problem far beyond estimated proportions. The only practical solution which would ensure secrecy was to issue more than one million specially impregnated anti-louse shirts, and a similar issue of underwear, less than two days before the troops landed on the Normandy beaches. That was the last headache about laundry. There were many others, and these are discussed in a later chapter.

Sea-sickness, and the alleviation of it, occupied the medical branches of the War Office for many months before D-Day. It was probably the only problem which defeated all efforts at finding a solution. Scores of experiments in landing craft were carried out. Unfortunate soldiers spent days at sea, lying off the coast in an unpleasantly lurching landing craft, trying out remedies. An amazing variety of remedies were put forward. Special seasickness tablets were swallowed by unwilling soldiers. They failed. Inoculation was tried, but the percentage of successes was too low to justify the trouble of inoculating so many men. Also, Movement Control could not tolerate the hold-up which might take place with thousands of men being inoculated daily. As the days wore on no adequate solution was forthcoming. Against every proposed remedy there was some overriding objection, either the materials were not available or the time factor prohibited the remedy.

There was a mid-period stage when the remedy was agreed as a bar of chocolate, a packet of biscuits and a bar of chewing gum. The order in which these items were to be consumed caused a great deal of amusement, and a lot of leg-pulling for the medical branch. Gradually, however, the remedy lost its chocolate, then its biscuits, and ended up as a lowly bar of chewing gum. Strangely enough, the procuring of this bar of chewing gum turned out to be a difficult matter, even if every American in Britain was chewing gum at that precise moment. Issues were restricted to troops landing on D-Day and D plus 1.

Seasickness was a big psychological factor to troops forming part of the assault forces. A seasick troop could not be expected to launch himself against the enemy with a great deal of energy and élan. The failure to provide a cure led to another last-minute demand. This was the provision of three Bags, Vomit, per man embarking. Bags, Vomit, were made from waxed paper, and had handles cut out near the opening. Each bag was to be used three times! Not a very savoury subject, but several million of these bags had to be manufactured and issued in a very short time. The issue of these bags confirmed our worst fears that seasickness had come to be regarded as unavoidable.

There was a time when our old friend waterproofing was almost held up for lack of grease. An alteration in the details of waterproofing almost trebled the demands for grease. As the demands poured in, the War Office provision branch concerned grew more and more anxious about their reserves. Consumption was daily advancing farther beyond production. The cause was a complete mystery to them, until they traced the reasons for such large demands and the cause came to light. The discovery meant a complete review of production.

Time and again small adjustments, such as that described above, had shattering consequences on the higher-level organisations. In no other experience, military or civilian, have I ever seen apparently trivial matters become of such moment.

One of the greatest and most exciting races against time was the research into the production of a loaf of bread which would retain its freshness for twenty-one days. War-time flour does not retain its freshness as well as the peace-time variety; that was an additional handicap to be overcome. The need for this kind of bread did not arise, and the researches might be said to have gone for nothing. The position which faced the planners, however, was that field bakeries might not be able to get into the beachheads and operate at the time scheduled, sixty days after D-Day, in fact.

During those sixty days the troops would have had to exist on army biscuits. Good of their type, these biscuits are not suitable for periods of longer than two months, as there is insufficient roughage obtained from them. The problem, therefore, was how to provide the troops with bread if the military mobile field bakeries were not available. The only answer appeared to be the use of special bread which could be manufactured in this country and shipped to the Continent. Its life must be in the region of twenty-one days, or else it would stale before reaching the troops.

Success was achieved shortly before D-Day, and quantities of the special anti-staling preparation were issued to military and civilian bakeries for use when required. Several military bakeries did manufacture "long-life" bread for use on board craft. The basis of the secret preparation is simple enough to be incredible. Its uses in peace-time will be many and widespread. The preparation is tasteless and odourless, and the quality of the normal loaf is not impaired in any way.

Another food invention promises to be even more widely used in peace-time. This was the invention of various self-heating foods. The need for these came through the lack of cooking facilities on board landing craft. At first sight it appeared that troops would have to eat cold food during their Channel crossing. Scientists got busy, however, and produced a tin of soup and a tin of cocoa which was self-heating. The device consisted of a built-in pillar of the heating element, in the actual tin of soup or cocoa. A small fuse projected at the top of the pillar, and when this was touched off with a cigarette end the heating element began to burn inside the pillar, and within five minutes the contents of the tin were boiling. No flames emerged from the pillar, and the hot drink could be taken within a mile of the enemy coast without any flashing of lights.

These tins were manufactured by the million, and proved most popular with the soldiers. During the crossing each man had his tin of soup and cocoa, which he could drink when he liked. Most troops preferred the hot drinks just before landing.

Examples of similar ingenuity abound. Many have received publicity in the press, and require no repetition. But the details I have included in this chapter should be sufficient to show that everything possible was lavished on this enterprise.

I hope that those who so glibly refer to War Office workers as "Whitehall Warriors" will now be big enough to eat their words. The British War Office completed their part of the general task nobly and well, and earned the highest praise from the Prime Minister in a recent House of Commons speech.

Remember that the part of the task described here was merely one facet of the overall picture which engaged the attention of the War Office. These facts merely refer to the peculiar needs of the operation. Alongside these unusual glimpses there was a hive of industry directed to the more ordinary but equally essential work of equipping and maintaining the force.

There was, in addition, a close liaison with the Americans, who were supplied with a great deal of equipment and stores which it was found more economical to produce and supply from British sources, rather than transport it across the Atlantic.

Well, we have been behind the scenes, talked with the stage managers and the property men. I think we might now take a look at the rehearsals.

CHAPTER IV

THE REHEARSALS

COMBINED OPERATIONS COMMAND

EARLIER, I POINTED out that the special function of Combined Operations Command was the training of troops for amphibious warfare. The execution of raids on the enemy coast was a secondary function, but these raids, apart from the physical damage they inflicted upon the enemy, performed a vital service, for they were the practical testing grounds of the theories being evolved by the training experts of Combined Operations Command.

The exploits of these pioneers who launched a series of raids and reconnaissances in force against the European coastline will rank as high as any feats of arms in British history, but each new adventure was just one more stepping-stone to the highest adventure of all—the invasion of Europe.

Each new success, a one-day wonder in the newspapers and public mind at the time, was analysed in minute detail by the staff of Combined Operations Command. Successful tactics were incorporated in the new training programme; outdated theories were dropped.

Trial and error went on unceasingly behind the now famous stories of the raids on the Casquet Lighthouse, Channel Isles, Lofoten Islands, Bardia, Tobruk, Crete, Vaagso, Bruneval, St. Nazaire, and, above all, that epic of courage—Dieppe.

Intervening between St. Nazaire and Dieppe came the capture of Madagascar, the first *permanently* successful exploitation of Combined Operations, in that the force, when landed, was intended to stay there.

Then in November, 1942, came the successful breaching of the North African coast by forces large enough to be termed "an invasion force". Once again invaluable lessons were learnt from this Combined Operations venture.

Not the least experience was that of the Navy in assembling such a large armada of ships and craft, and marshalling them into correct order of approach when landings were scheduled to be made.

The experience gained here was above price when the more complex Second Front assault was launched. In fact, many of the ships and craft were used in both invasions.

But even North Africa was by no means comparable with an assault to be launched against the "West Wall". Dieppe had proved beyond doubt that the breaching of the West Wall was a task of enormous difficulty, which would require altogether new weapons, a gigantic assemblage of strength, and a maintenance system over beaches beyond the imagination of any assault task ever before planned.

Whereas the tanks landed at Dieppe numbered twenty-eight, this invasion would require tanks by the hundred; tanks that could wade through several feet of water, and yet not be handicapped for immediate land tasks on and around the beaches.

Let us examine the attitude of the Germans sitting behind their steadily-strengthening "West Wall". They had had no experience of Combined Operations other than to be on the receiving end. They could only draw conclusions from such evidence as we had offered in small-scale raids. There was no way they could calculate methods of defence against forms of attack which had never before been launched.

The Germans became "Maginot" minded. The thoroughness of their defensive measures along the French coast can now be seen in the full light of detailed examination, which has been made since D-Day. They were thorough, and the defences were virtually impregnable against known weapons and methods of attack. But whereas the Germans were like a boxer with immense power to absorb punishment, but half blinded, we stood off at the other end of the ring lighter in power but keener in mind, devising new methods beyond the apprehension and sight of our opponent, to pull down his defences and deliver a knock-out blow.

This boxing analogy is not far-fetched. There was much similarity between the impending struggle and a contest between two heavyweight boxers for the world's championship.

In one corner stood the well-tried, much-exhibited German, acknowledged champion. In the other stood the challenger, winner of sundry minor bouts, young and growing in strength, and as yet untapped of his full resources, able to study his older opponent from many contests in which other opponents had been K.O.-ed, and, above all, blessed with the virility of youth, ambition and initiative.

This was no ordinary problem that faced the staff of Combined Operations Command. This was not a question of training a small commando force to a razor-edge of fitness, and then launching a raid which would be all over within a few hours. No, this was a matter of launching several hundred thousand men and machines within a few days, and then establishing and maintaining this force for an unlimited period over precarious beaches.

Combined Operations were not responsible for the conduct of the land battle. Their work was confined to the method of reaching and initially engaging the enemy. It was a war within a war; a means to an end. Once battle was joined and the bridgehead successfully established the specialist work of Combined Operations was ended.

Within a few days of D-Day I received a copy of the Combined Operations Command magazine *Bulldozer*. It announced that this was the last issue—a sufficient commentary that Combined Operations Command had served its purpose royally and well, and a commentary, also, that their work was not a substitution for normal land battle, but merely something which had to be superimposed before battle could be joined.

And so, behind the scenes of publicly-announced raids and minor invasions, Combined Operations Command carried on the training of the Allied Expeditionary Force.

Behind the barriers of security-restricted Northern Scotland, on the Highland lakes, the Combined Training Centres dealt with ever-increasing numbers of troops who were to become the vanguard of the invading forces. Passenger steamers, train ferries and hundreds of other vessels were converted into infantry landing ships, and a host of smaller specialised craft gathered in the lochs, each designed to perform a special function, but each dependent upon the other members of the team for combined success.

What a plan! To weld together, in knowledge, experience and ability, a million men!!

During 1941, 1942, and 1943 the columns of men and vehicles wound quickly northwards, to spend their training time at the centres. There they learnt how to get on and off a landing craft, how to live in infantry landing ships, how to waterproof vehicles, how to manœuvre tanks and vehicles into craft and ships, and the hundreds of little points that had to be known to make invasion a success. Then back down the road to their normal duty station to await D-Day.

Some of these men must have felt the experience was pretty valueless, as the months and even years passed and D-Day failed to arrive. It was not for them to appreciate the hundreds of thousands of men who had to pass through the machine before high-perfection was reached. . . . "They also serve who only stand and wait."

One classic example was a General Transport Company that went to Scotland in late '41 and early '42, and came back to their location full of excitement and enthusiasm for Combined Operations. Then the months passed and nothing happened. The final blow came in the summer of '42 when the company designation was changed to Tipper Company. How they all cursed when they appeared to be doomed to carrying ballast for the Royal Engineers at some base installation.

But the plans had not misfired, for the company was one of the first to be landed in North Africa, and were employed making the very first airfields within a few days of D-Day!

It was at these centres that tactical stowage for the assault force was evolved. What was loaded first had to be unloaded last. No mistakes could be made in this stowage. What use guns without ammunition? What use tanks without fuel? Everything had to be planned to the last little signpost and box of spares. Gradually a design was developed, and the broad outlines of tactical stowage were laid down.

There was, of course, no finalised detailed lay-out. Tactical stowage varied with each operation, with each craft, and the particular task entrusted to the force assembled in that craft. Combined Operations Command discovered all the mistakes that were made through lack of experience, and gradually evolved a fool-proof drill, the details of which varied according to the individual task in hand.

This was not as easy as it sounds. Stowage might be spread over a considerable time when conditions permitted, but unloading is a matter of split seconds when death scorches the skies and seas around the craft, when a ten-seconds delay will mean the destruction of a whole assault force, and prejudice the success of the whole operation.

Always there were the contradictory requirements of keeping the assault force as lightly equipped as possible, to increase mobility, yet of providing the equipment necessary to ensure that arms and men were landed in a condition fit to fight for their lives.

On the very first expedition it was found that a Bren gun resting on the gunwale of a landing craft was rendered partially inoperative through spray, and did not function properly until the working parts had warmed up and lubrication became normal!

This and a thousand other vagaries which are peculiar to amphibious warfare were the problems solved by Combined Operations Command. Every working part of every craft had to be specially designed. Nothing could be accepted because it had been normal practice. Down to the last boathook, the last sling, everything was examined by experts and redesigned where necessary.

Each craft was designed for a particular role. Performances of craft and weapons required by the specialised task were often at loggerheads with the main requirements of the force and the necessity for the cohesion of that force.

The success of all amphibious operations is dominated by the time factor. Time reduced to seconds, not minutes and hours. Time, when an assembly of hundreds of ships and craft is at the mercy of the weather in all her strange trickery; time, when men of the same force know that if they are minutes late the bodies of hundreds of comrades will be littered across the beaches miles away, because they have failed to keep their rendezvous and carry out their part of the main task.

No more inexorable mistress has ever ruled military operations than Time has controlled our amphibious expeditions; and none has granted greater rewards for assignments truly kept.

This is not the place for a detailed account of the work of Combined Operations Command; that will surely be written by those more fitted than myself. Yet, some overall picture of their activities is necessary to understand the scope of operations covered by our expeditionary force before they even touched enemy soil.

While training was moving apace, while raids and smaller invasions were taking place around the world's circumference, a specially-selected group of men began constructing the points from which the invasion would be launched.

At seaside beaches, alongside quays and jetties, in river stretches flanked with trees, between shipyard slipways, the almost insignificant little hards, with their chocolate-looking slabs, began to take shape.

Hards which were used for loading and unloading landing craft were the most disappointing sights. I remember seeing my first hard during a reconnaissance. Well, it is hardly true to say that I saw it, because while I actually stood upon the concrete slabs I was uncertain whether it was the right place. A lifeboat house nearby lent credence to the belief that this might be a slipway for the lifeboat. But a careful check of map references proved that this tiny stretch of concrete slabs was in fact a hard, and destined to become one of the invasion embarkation points.

It consisted of some hundreds of yard-square slabs, impressed like blocks of chocolate, and fastened together by interlacing wire handles. A jetty ran out into the water dead centre down the hard. A fuel pipe ran along the jetty. Otherwise there was nothing to differentiate this from any other stretch of the English coast.

At these hards trials were conducted and vital logistics compiled. How many vehicles and men could be loaded in a given time? At what states of tide could loading be carried out? What height of sea would prevent loading? What was the effect of currents on craft when loading? Did shingle sweep up the hards and prevent vehicles from reaching the craft, until bulldozers had cleared the hards?

There was no overall formula to apply to any two hards. Each hard had to be individually tested, because tides and currents, shingle and mud, winds and weather, were peculiar to each individual hard. And it was vital to know the output of each hard, so that the total output for the force at any one tide could be calculated.

This figure was especially important for the assault force, as the Expeditionary Force had laid down, the first day's embarkation at 250,000 men and vehicles.

Movement once begun from inland camps would not be easy to stop or divert, and so hards in adjacent areas had to be constructed to be complementary to each other, so that when one was incapacitated through particular tides and particular winds the complementary hard became usable by virtue of just those conditions!

Once the hards had been selected the question of suitable road approaches had to be examined in relation to the camps lying inland. Few hards conformed to good road approaches, and roads had to be developed inland to link up with the main highways.

This, however, leaves the realm of Combined Operations and brings us to the Movement Control Branch. This branch of the staff was made responsible for the movement of the whole invasion force from all corners of Britain, through the vast, widespread organisation, into these tiny bottlenecks, where craft awaited to bear away the crusaders for freedom.

The apparent ease with which the whole organisation worked in practice is probably sufficient tribute to the efforts of Combined Operations Command, who exhibited the rarely complementary qualities of dash and ardour in their frequent public references, and the grim, dour, untiring patience and attention to detail, demanded by the training and secret preparations for the "big show".

And this brings me to a brief outline of the Movement's organisation, which overshadowed every other consideration in the assembly and despatch of our invasion armies.

Movement Control became the mother and father of the planning, and this was no unmixed blessing, as later pages will show—but nothing was spared by Movement Control staffs in their efforts to co-operate with other branches of the staff.

CHAPTER V

THE CURTAIN RISES

THE TASK OF MOVEMENT CONTROL

THIS CHAPTER IS primarily devoted to an explanation of the task and responsibilities of Movement Control. As I have already warned you, however, Movement Control impinged so deeply upon every other aspect of the operation that I have had to delve very deeply into the unfolding of the plan for the operation. This chapter, therefore, would be more correctly headed: "How the Plan was Devised, and the Part Played by Movement Control." The introduction of the actual plan into the middle of this chapter probably steals the dramatic from what is, after all, the highlight of this story, but it is felt better to introduce the plan and lose the highlight if this helps to give you a better understanding of what took place.

Now, what is Movement Control? It is nothing more than an arm of the service, or less than that, one branch of an arm of the service. Just as the Royal Army Service Corps is designed to deal with transport on the one hand and food on the other, so are the Royal Engineers divided into various branches. Some Royal Engineers are experts at mining and demolition, others are experts at bridgebuilding and roadmaking, while one branch has taken unto itself the job of controlling movement. This last branch is known as Movement Control, and is responsible for the organisation and control of military movement by road, rail and sea. All large bodies of military personnel, stores, supplies and equipment are moved under the auspices of Movement Control. It follows, therefore, that the launching of our invasion forces must present a large problem to the Movement Control staffs. In fact, it became an early precept of planning that virtually everything must be subordinated to the requirements of Movement Control. When the plan was completed, of course, it was evident that many desiderata of Movement Control, which simplified their own particular task, could not be upheld because of other important considerations, such as the welfare and rest of the troops, the need for waterproofing vehicles and such things. When the movement and the administrative claims clashed the problems were referred to arbitration, and a compromise reached.

Nevertheless, the launching of this operation was primarily a Movement Control concern, and administrative arrangements had to be fitted into the Movement Control plan. It says much for everybody's good sense that the partnership worked as well as it did. Most of the administrative planners had very little idea how Movement Control worked, and at first rather resented this outside dictatorship. Gradually, however, the tension eased and solid teamwork was established.

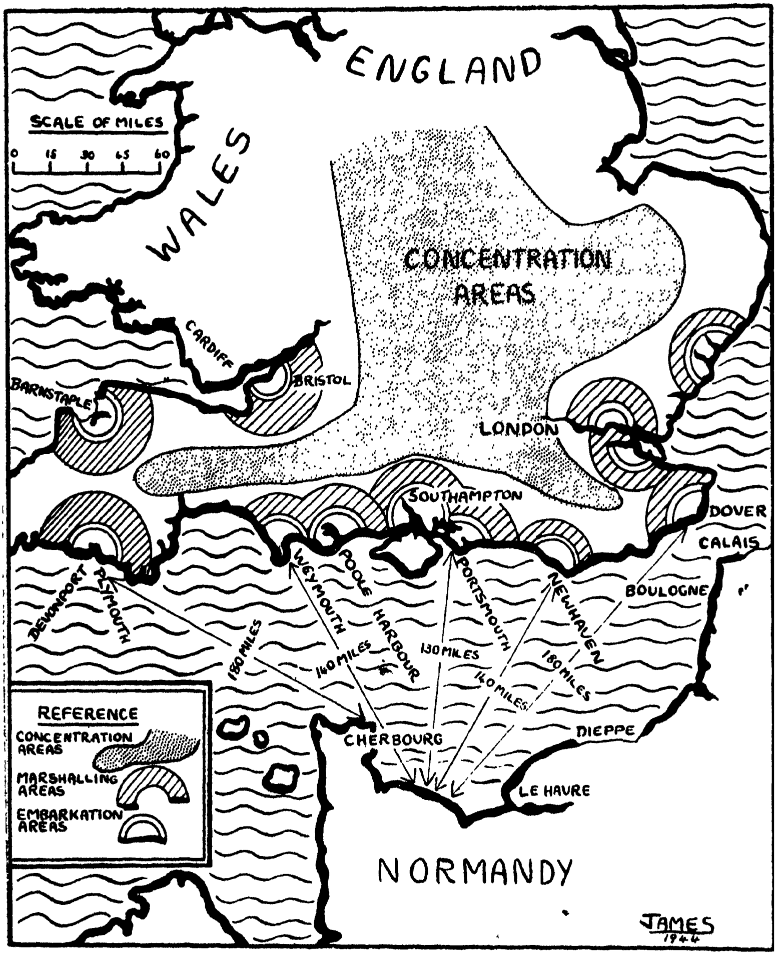
Picture the Movement Control task. Upwards of one million men, with all their accompanying stores and equipment, had to be moved from remote parts of the country, by road and rail, and guided through some twenty points of embarkation. Each unit had a serial number, and once those units began to move Movement Control had to keep a finger on them all the time until they could be embarked and struck off the roll.

Delays could not be tolerated. A steady flow of troops from embarkation points was essential. The troops had to be embarked in a predetermined order. Come hail, come shine, the movement must be uninterrupted. Side by side with this physical movement of the troops and their equipment there was a massive rail and road programme of stores and supplies movements to certain ports for the maintenance of the force once it reached France. Hundreds of ships, large and small, were being loaded with the necessities of war, at the same time as the troops themselves were taking up their battle stations.

This was the overall picture. It would have been a tremendous task to accomplish if railway rolling stock had been at peacetime standards and in peace-time quantities, if Movement Control had been able to operate their normal organisation, and if the moves had not involved some totally new features, never before experienced. But, superimposed upon all normal difficulties was the peculiar demand of the invasion lay-out. This meant recasting the existing Movement Control organisation in a great many respects.

Six factors required immediate consideration, and upon the solutions to these problems depended the lay-out of the invasion machine in this country. These factors were the prime determinants, although many minor factors also entered into consideration. This, then, is the abbreviated story of how the invasion lay-out was devised.

The first factor was that the movement of one million men and their 200,000 vehicles was all in one general direction, all roads and railways converging into the embarkation-point bottlenecks. This factor brought out the need for traffic-control



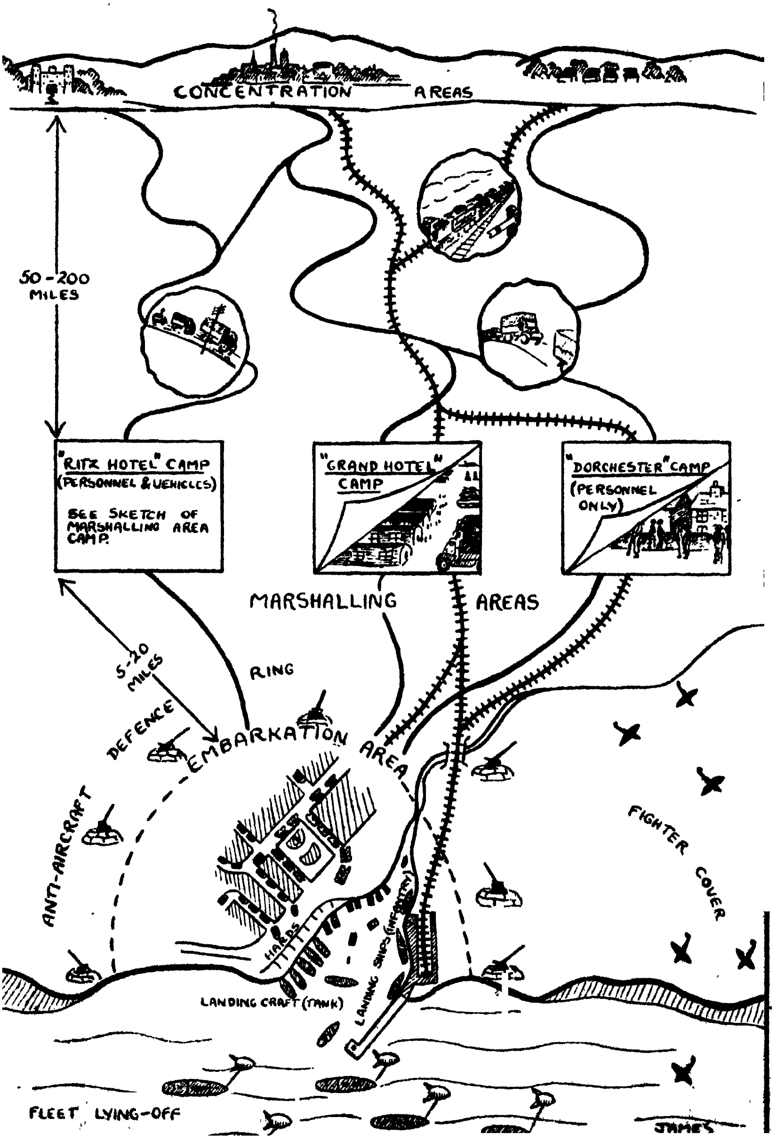
General View of the Invasion Lay-out in the South of England before "D" Day systems wider than any ever before devised, and compelled the most accurate and detailed timing of movement to prevent road and rail blockages.

The second factor was that somewhere along the movement routes units would have to lose their unit identity and be converted into craft-loads. This factor brought out two points. Firstly, there must be a Movement Control organisation to issue orders and instructions to units as to how they were to be divided into craft-loads. Secondly, immediately a unit was broken up it lost its power to look after itself. For instance, the cooks and cooks' vehicles might easily be the first part of a unit called forward to embark. A unit could not be left without the means of subsistence, and some organisation would have to be set up to feed and accommodate the units. It was also self-evident that this organisation must be central to the main converging routes, and fairly near to the points of embarkation.

The third factor was that tides and weather were unfortunately not under the orders of Movement Control. Weather vagaries could upset the planned flow of movement, and only exceptional luck would ensure that a steady flow of units through ports and hards was maintained. Planning does not allow for luck, and it appeared necessary to make provision for occasions when units were moving forward to embarkation but for some reason or other embarkation was prevented. The units could not be allowed to sit by a roadside, nor was it practical to turn them round and send them back to their old location. This factor determined that accommodation must be made available as near as possible to the points of embarkation to meet these contingencies.

The fourth factor was that when vehicles had to land on the far shore they had to wade through water, and consequently had to be waterproofed. Waterproofing imposes distance limits on vehicles, and had to be done in stages. Stage I took some two days to effect, and afterwards limited a vehicle to running 200 miles. Stage 2 took sixteen hours to effect, and limited a vehicle to running only a few miles thereafter. Stage 3 took half an hour to complete, and limited the vehicle to running only a very short distance. The vital consideration seemed to be the Stage 2 task, for this meant a sixteen-hour wait at some place not more than a certain number of miles from the point of embarkation. It followed that accommodation for vehicles and personnel would have to be found to meet this situation.

The fifth factor was that vehicles had to disembark with full petrol tanks. Therefore, a suitable location had to be found at which petrol tanks could be refilled, as near to the embarkation point as possible.



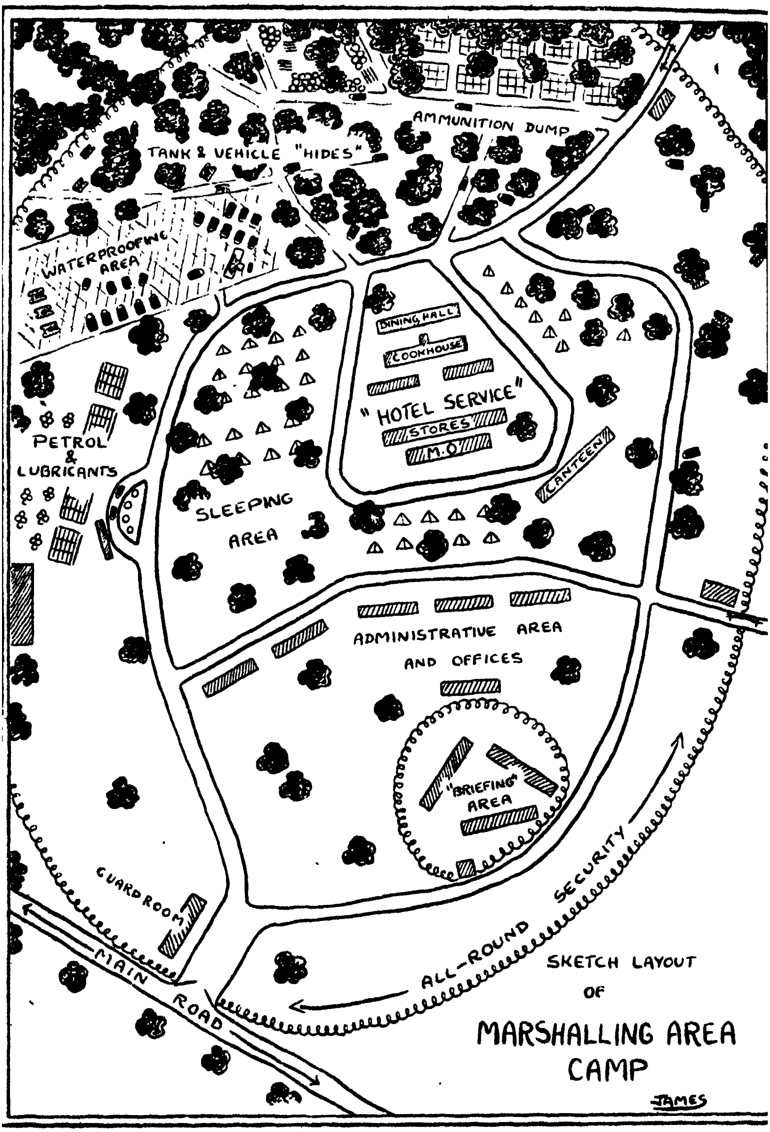
Diagrammatic View of the Invasion Lay-out

The sixth factor—and the factor which caused most disagreement between movement and administrative planners—was that it had been laid down that the troops must be embarked in the pink of condition. Troops had to be well fed, well rested, and generally toned up to the peak of morale. It followed from this that the troops must be served with good hot food up to the very last moment. They had to have adequate sleeping accommodation near the embarkation points.

There they are, the six major considerations. An analysis of the requirements showed that most of the answers lay in establishing camps within a few miles of embarkation points. In these camps units would have a complete "hotel service", and the organisation became known by this term. The camps were organised in groups, and given the name "Marshalling Area", indicating that at these camps units were marshalled into craft and ship loads. (See Sketch on page 52—"Sketch Lay-out of a Marshalling Area Camp".)

This was the outline theory. How was the organisation actually prepared? Well, we have read how the embarkation points were established along the coast. These points are the crux of the whole organisation, and everything was built backwards from these. (See Sketch on page 48.)

Let us take one embarkation point and build up the organisation rearwards. Assume that this embarkation point is capable of embarking 300 men and 100 vehicles each day. What have we to do at this point? Naturally, we have to watch over the loading of the men and vehicles. The third stage of waterproofing has to be done near at hand. Movement Control must collect the documents of the embarkation parties so that we have records of who and what has gone through the port, or hard. The administrative staff have declared that the men must be given a final cup of tea, so we need tea points. There is a big policy question involved here. Movement Control have laid it down, categorically, that men will not move more than ten yards from their vehicles at this stage. Well, so what? Well, a great deal. If the men can't come for their tea, then arrangements must be made to take it to them. But that's not all; sanitary arrangements must be made along the roadside at intervals of 100 yards. Slit trenches, in case of air attack, must be dug at even shorter intervals. As some of the areas are in the centres of large towns these necessities are easier to demand than to provide. Quite apart from these more or less personal arrangements, we must have an organisation for placing food supplies, cookers, blankets and other small items on board craft.


AMMUNITION DUMP
TANK & VEHICLE "HIDES"
WATERPROOFING AREA
DINING HALL
COOKHOUSE
"HOTEL SERVICE"
STORES
M.O
CANTEEN
PETROL & LUBRICANTS
SLEEPING AREA
ADMINISTRATIVE AREA AND OFFICES
"BRIEFING" AREA
GUARDROOM
MAIN ROAD
ALL-ROUND SECURITY
SKETCH LAYOUT OF
MARSHALLING AREA CAMP
JAMES

In fact the organisation has become quite a large affair. The staff runs into three figures. So we call the whole area by the name of "Embarkation Area", and the staff come to be known as the "Embarkation Area" staff. All the constituent pieces are accommodated within a mile or two of the embarkation point. (See Sketch on page 50—"The Invasion Lay-out".)

From the Embarkation Area we work rearwards to the Marshalling Area, about which I have already written. This collection of camps normally serves a number of Embarkation Areas and is centrally placed to them.

The Marshalling Area is an interesting study. The staff of each area numbers several hundred. Each area is designed to be a small self-contained township, even if accommodation is under canvas in the main. The size is governed by the capacity of the embarkation points which it serves, and is based on accommodating two days' flow. If the capacity of the embarkation areas, daily, is 5,000 men and 1,000 vehicles, then the Marshalling Area must be able to accommodate 10,000 men and 2,000 vehicles. We will go deeper into the administrative side later; here, we are looking at the Movement Control side. In the Marshalling Area there is a large Movement Control staff. These personnel prepare calling-forward lists of units to be embarked next, inform the units of their craft and split-up, check over the shipping details to see that everyone is batting on the same wicket, and then give the unit movement instructions to the point of embarkation.

Now, the only other obvious complication to the Movement Control set-up is this question of the first stage of waterproofing. This limits a vehicle to a 200-miles journey. Obviously, some rearrangements of normal locations will be necessary to bring all embarking troops within this 200-miles radius. The solution is to mark off an area within 200 miles of the points of embarkation and call this the Concentration Area. Before any movement to embarkation begins it will be necessary to concentrate all embarking troops in this Concentration Area.

That's all there is. The organisation is complete. Now let us take a look at the other side of the fence, and trace the movement of, say, an infantry battalion from its home station, which is in Perth.

Perth is more than 200 miles from any embarkation area. So one day the Commanding Officer of the battalion receives an order to move his unit to Aldershot. Carriers, being tracked vehicles, go by rail, the rest of the unit by road. Two days later the unit arrives at Aldershot. The C.O. receives a package, marked "Top Secret", containing his Preparatory Orders, telling him what steps he must take before the unit is deemed to be concentrated. Probably a fortnight later he receives a further set of instructions, and is told that his unit will be deemed to be concentrated within seven days from receipt of the new instructions. From the moment the unit is deemed to be concentrated it must be prepared to move to the Marshalling Area within six hours of receipt of movement orders. In due course the movement order arrives, the unit makes its way to the Marshalling Area, and is there split up into craft-loads, while vehicles are waterproofed and the last check on equipment is made. Within another two days the unit has broken up, and is on the high seas, sailing for France.

This is how the organisation actually worked, and, like every other British institution, had to be given a nickname. The name given was "The Sausage Machine".

So far we have seen how the organisation was built up, and how a unit made its way through the sausage machine. Now we come to the really complicated part. How did Movement Control know which unit to call forward, and to what embarkation point?

The answer to that question is the story of how the Force planned the whole operation. It is simpler to go back to the very beginning and trace the plan through its many highways and byways, and that is why I said at the opening to this chapter that it was impossible to separate Movement Control from any aspect of this operation.

I see no reason why we should trace events back to the time when the political decision was taken. We all know of the several conferences between the heads of the various Allied Nations. Out of their general decisions grew the organisation we have tried to reconstruct, but from the invading force's point of view the first really solid factor is the Outline Plan of the Supreme Commander. Until that is issued no detailed planning can take place. In this case it was the plan of the Supreme Commander, General Eisenhower, and would be addressed to General Montgomery, who had been designated to take command in the field during the early operations.

This is the type of document that General Eisenhower would address to General Montgomery:

SPECIAL INSTRUCTIONS, ALLIED EXPEDITIONARY FORCE

Reference Maps, FRANCE, Sheets 1, 2, 3, 4, etc.

Supreme Headquarters, A.E.F., Operation Instruction No. 1.

To: General B. L. Montgomery, G.O.C.-in-C., 21 *Army Group.*

1. H.M. Government and the Government of the United States of America have decided that circumstances are favourable for the carrying out of an operation with the object of destroying the German armed forces at present located in FRANCE and WESTERN EUROPE. Our occupation of these countries will be welcomed by the provisional governments now established in GREAT BRITAIN, and there is evidence to suggest that the peoples of WESTERN EUROPE will also welcome liberation. In particular, the people of FRANCE have shown willingness to throw off the GERMAN yoke, and it has been decided that the main operation shall be launched through FRANCE.

2. The operation will be carried out in three stages:

(a) STAGE I—The seizure of bridgeheads in NORMANDY;
(b) STAGE II—The consolidation and development of the bridgeheads to enable a sufficiently large force to be landed and organised, to ensure the defeat of the full enemy forces;
(c) STAGE III—The subsequent advance into FRANCE, and the liberation of other Western European countries.

3. The operation detailed in paragraph 2 (a) and (b) will be planned as a joint Allied operation in which BRITISH, CANADIAN, AMERICAN and other Allied troops will take part, and will be carried out during the early part of JUNE, 1944. The armies taking part will be:

SECOND BRITISH ARMY
FIRST CANADIAN ARMY
FIRST AMERICAN ARMY

The projected area of the bridgehead to be secured includes the whole of the coastline of FRANCE from ISIGNY to HONFLEUR, both inclusive, and the forward limits of the bridgehead will be the line ISIGNY—ST. LO—CONDE—FALAISE—LISIEUX—HONFLEUR, all inclusive.

4. The operation detailed in paragraph 2 (c) will be carried out initially by the THIRD AMERICAN ARMY, under your command, and, as conditions permit, by the armies shown in paragraph 3, as these are freed by the disengagement or destruction of the enemy. You will plan the operation forthwith, bearing in mind the following points.

5. *Task*—Your task will be to:

(a) Secure the bridgehead detailed in paragraph 3;
(b) Break out from the NORMANDY beachhead, and effect a broad enveloping movement round the GERMAN left flank, using the River SEINE as a pivot for this movement;
(c) Secure the ports of CHERBOURG and HAVRE as quickly as possible;
(d) Advance upon and seize PARIS.

6. *Area of Operations.*—Your operations will be directed towards the EAST and NORTH of FRANCE, and penetration into BELGIUM and HOLLAND will be effected as far as your resources will allow. Penetration to the SOUTH of the bridgehead will only be effected to suit your tactical requirements, and, at a later date, to link up with the SEVENTH AMERICAN ARMY, which will land on the SOUTH coast of FRANCE at a suitable moment, and fight NORTHwards to join up with your forces. Full information on this aspect of the operation will be forwarded to you as available.

7. *Enemy Forces.*—The locations of enemy forces, as far as is known, are shown on Map A, attached. A summary of the latest information about the GERMAN forces in FRANCE is shown in Appendix A, attached. Coincident with your operation, additional attacks will be feinted elsewhere, with the object of pinning down the GERMAN forces manning the coast defences, and thus preventing the concentration of enemy forces against you as long as possible. No call will be made on forces allotted to you for your operation to support these diversionary feints. Pressure by the RUSSIAN forces on the EASTERN front will be increased to coincide with your attack, in order to make the withdrawal of GERMAN troops from the EASTERN front as difficult as possible. The rate at which GERMAN reinforcements can reach your front will depend upon the success of our air forces in destroying communications and how far the enemy can disengage formations from the EASTERN front. It is estimated that GERMAN reinforcements could arrive in NORMANDY as follows:

(a) One division after seven days;
(b) A further division every 36 hours.

8. *Concentration of Forces in Great Britain.*—The Order of Battle of the troops under your command is shown in Appendix B, attached. The proposed Concentration Areas are shown in Appendix C, attached. The location of formations is based mainly on the port facilities, and the types of craft available for the seaborne landings. You will have no responsibility for planning the land concentrations and seaborne parts of the operation, but it will be open to you to suggest minor alterations in locations which you consider will affect your operations.

9. *Airborne Forces.*—The Airborne Divisions shown in Appendix D, attached, will be placed under your command for specific tasks connected with the initial assault, after which these forces will be returned to Collecting Centres, in ENGLAND, for reforming. The Airborne formations shown in Appendix E, attached, will be held in readiness in G.H.Q. reserve, in ENGLAND, to give you support. Requests for Airborne assistance, beyond the forces allotted to you, will be made to Supreme Headquarters, A.E.F. The use of Airborne forces will be planned in conjunction with Air Marshal . . . who will be able to assist you in connection with R.A.F. matters.

10. *Speed.*—You will develop your operations as rapidly as possible in order to achieve your object before the GERMAN forces opposed to you can be too heavily reinforced. It is planned to land ten divisions on D-Day. Subsequently, shipping and port facilities limit the despatch of troops to the equivalent of two divisions with equipment each day. The rate of acceptance over the beaches is estimated at the same capacity, and a port is not essential to the success of the operation for the first ninety days, although still desirable in the shortest possible time.

11. *Reinforcements.*—No additional formations will be available for your operations until D plus 90, when the NINTH AMERICAN ARMY will be added to your forces. Individual reinforcements will be effected through normal channels.

12. *Air Co-operation.*—The SECOND BRITISH TACTICAL AIR FORCE and EIGHTH UNITED STATES ARMY AIR FORCE will be allotted to your force, and will be deployed for tactical operations as required by you. Air Marshal . . ., who will be Deputy Commander-in-Chief, will be responsible for the planning and execution of air operations. In addition to the above Tactical Air Forces, assistance will be given to you by

British and United States bomber formations. The projected use of these formations in the preliminary softening-up strategical plan is shown in Appendix G, attached. Any alterations to this programme you may require should be forwarded to Supreme Headquarters immediately. Calls for the use of heavy bomber formations during the operation will be made to Supreme Headquarters, bearing in mind that it will normally be impracticable to attack targets the same night unless they are notified to Supreme Headquarters before 1200 hours on the day in question.

13. *Naval Support.*—H.M. Ships shown in Appendix H, attached, will be available from H minus 120, on D-Day, for naval bombardment of targets nominated by you. Admiral . . . will co-operate with you in planning the best use of Naval support.

14. *Airfields.*—The seizure and development of airfields will be your responsibility. It is known that airfields are already in existence, as shown in Appendix J, attached. It is known, also, that the areas shown in Appendix K, attached, are suitable for the development of airfields, though it is expected that your reconnaissance will reveal further suitable areas. The first airfields should be prepared within 48 hours of the initial landings.

15. *Cover Plan.*—The cover plan is shown at Appendix L, attached. Any aspect of your detailed cover plan which requires dissemination will be implemented by Supreme Headquarters, A.E.F.

16. *Gas.*—You will bear in mind that the GERMANS may resort to the use of gas and other forms of chemical warfare, in which case you will be permitted to use gas in retaliation. You will state, therefore, your requirements in chemical warfare stores.

17. *Administration.*—Local supplies, of all types, in FRANCE, are barely sufficient to meet the requirements of the inhabitants. You will, therefore, consider this country as an administrative desert as far as your operations are concerned. You will state your estimated requirements in supplies and stores of all natures, bearing in mind that the greater your demands, the greater will be the delay in launching your operations.

Maintenance of the forces under your command will be undertaken from advanced base depots, located in a sub-area established east of the ports of CAEN and CHERBOURG. CAEN, and the eastern artificial port, will be used for the maintenance of the BRITISH and ALLIED forces, other than AMERICAN.

CHERBOURG, and the western artificial port, will be devoted to the requirements of the AMERICAN forces. LE HAVRE, when freed, will become the BRITISH base port.

Rail facilities are unlikely to be available for the first ninety days of the operations, but sufficient road transport will be landed to enable you to advance up to four hundred miles.

18. *Royal Engineer Stores.*—You will also state your estimated requirements in bridging material, and other major items of Royal Engineer stores, bearing in mind that the initial commitment of Royal Engineer forces, in the building of the artificial ports, is very heavy. The available Engineer intelligence is shown in Appendix M, attached.

19. *Maps.*—As soon as a bridgehead is secured Field Survey Depots will be established, and bulk stocks of maps of FRANCE (one inch and one-quarter inch to the mile) will be sent from ENGLAND to stock them. Arrangements for the issue of maps required for subsequent operations will be your responsibility. Sets of film negatives of 125,000 sheets, covering the probable area of operations, will be made available to you, so that printing of 125,000 maps may be undertaken in the field.

20. You are at liberty to take into your confidence such of your subordinate commanders and staff as you consider necessary to plan this operation, bearing in mind the vital necessity for secrecy.

21. Your appreciation, plans, including cover plan if required, and estimated requirements will be forwarded to Supreme Headquarters, A.E.F., as early as possible.

D. EISENHOWER,
General,
Supreme Commander, Allied Expeditionary Force.

Spring, 1944.

From this outline intention General Montgomery had to work out his plan. He had to divide the forces into three parts, Assault Force, Follow-up Force and Build-up Force. The Assault Force comprised those troops who were to land in the very first waves, and whose task was to smash through the German defences and establish the bridgehead. The Follow-up Force comprised those troops scheduled to arrive on the second and third tides, and whose task was to consolidate the bridgehead. The Build-up Force comprised the remainder of the troops.

After fully appraising the situation General Montgomery then allotted to each Army a particular task, or series of tasks. For the moment the Commander-in-Chief could rest, while the Army Commanders grappled with their tasks. In their turn the Army Commanders allotted tasks to their Corps Commanders, who in turn allotted to Divisional Commanders.

From the very broad outlines of the Commander-in-Chief's plan, each step downwards narrowed the outlook and increased the detail. Finally, individual tasks were allotted to the infantry battalions, and it is at this point that the process reverses and the plan in all its detail began to go upwards again.

The Commanding Officer of an infantry battalion, selected to take part in the assault stage, received from his Brigade Commander information like the following:

"Your battalion will land at first light on the beach, firm shingle, 50 yards deep. Enemy opposition will consist of small arms fire from pillboxes sited along the verge of the beach, and from anti-tank guns, sited in rear, covering the paths debouching from the beach. The estimated total enemy forces guarding your section of the beach is one company of infantry and six anti-tank guns. Your initial task is to secure the beach, destroy the pillboxes and anti-tank gun positions. You will consolidate your position 800 yards inland. The assault will be made at assault scales. The following assault craft have been allotted to your battalion."

The information given above is, of course, a very abbreviated précis of the information actually received by each Battalion Commander. In the actual documents were maps and drawings showing boundary lines, supporting troops, and a hundred-and-one other facts; but the general terms serve to give an indication of the type of information supplied.

On this information the Battalion Commander made his detailed plan. He had to decide in what tactical formation his battalion would land. What equipment would he require, and what could he leave behind? In what order would equipment and stores be stowed in the landing craft?

Once all the details had been ironed out, the Battalion Commander had to convert his plan into factual statistics. One table had to show the exact allotment of personnel and equipment to each craft, the time of landing (stated in minutes and seconds!) for each individual craft, and other technical information. This was called the "Landing Table", and provided, in due course, the first link with Movement Control. It was from these Landing Tables that Movement Control compiled their Loading Tables, and were thus able to embark units in their right order.

Now, step by step, the plan, in all its details, moved upwards. Each superior commander consolidated the plans of his subordinate commanders, and then forwarded the consolidated plan to the next higher level.

Eventually, the detailed plans arrived at Army Group Planning Staff Headquarters, where the necessary adjustments were carried out.

The planning staff now came into their own again. They held in their hands tables showing every man, every store and every single piece of equipment to be embarked. Next, they had to fit the allotment of craft to ports and hards so that each port and hard had its share of shipping, and an even flow could be ensured. Copies of this information, in the form of Loading Tables, were sent to Movement Control.

The availability of shipping once again proved to be a stumbling-block to complete planning at this period. There were insufficient craft and ships to allot separate vessels to *all* the troops embarking. In fact, the number of craft available prevented the pre-allocation to troops other than the Assault Force and Follow-up Force. The Build-up Force had to take pot luck with what craft were available after the inevitable losses of craft in the Assault and Follow-up phase had been deducted. In the estimates of shipping losses, which must be made when envisaging a long-term plan such as that under survey, a loss of 40 per cent of the craft and ships used to land the Assault Forces was allowed for. This estimate probably epitomises the seriousness with which we regarded this venture, and the losses we were prepared to sustain. Not all the craft and ships sunk by enemy action would have personnel on board, it is true, but had we lost 40 per cent of our craft on D-Day, then assuredly 25 per cent of the Assault Force would have lost their lives also. (The actual losses on D-Day were far below the estimated figure, and subsequent losses, which were allowed for, were also much less than we anticipated, with the result that the build-up proceeded slightly faster than we planned.)

However, to return to the planning stage. The most that the planning staffs could do was to make a specific allocation of craft and shipping to the Assault and Follow-up Forces. The first seven days' sailings were worked out in complete detail. Later sailings were compiled in order of priority only, as no allocation of craft could be made. Obviously, this was a snag, a very serious snag. The only answer was to set up a control which would have to devote its sole energies to the allocation of units to craft as the operation proceeded. Two controls were created in due course. One was named the Turn-Round Control (T.U.R.C.O.) and dealt with the availability of craft. The second was the Build-Up Control (B.U.C.O.), and this control dealt with the allocation of troops to craft made available by T.U.R.C.O.

B.U.C.O., which was largely a Movement Control organisation, formed the last link in the Movement Control chain, and from this control flowed a steady stream of movement forecasts to the Home Command Movement Control staffs, who were thus able to marshal units in agreement with the forecasts.

In the diagram, facing this page, you will see the general Movement Control organisation. The right-hand chain is that of the Coast Movement Control, which was made responsible for embarkation of troops, and was independent of the normal Command Movement Control, coming directly under control of the Director of Movements. Thus the Command Movement Control responsibility ended at the rear of the Embarkation Areas.

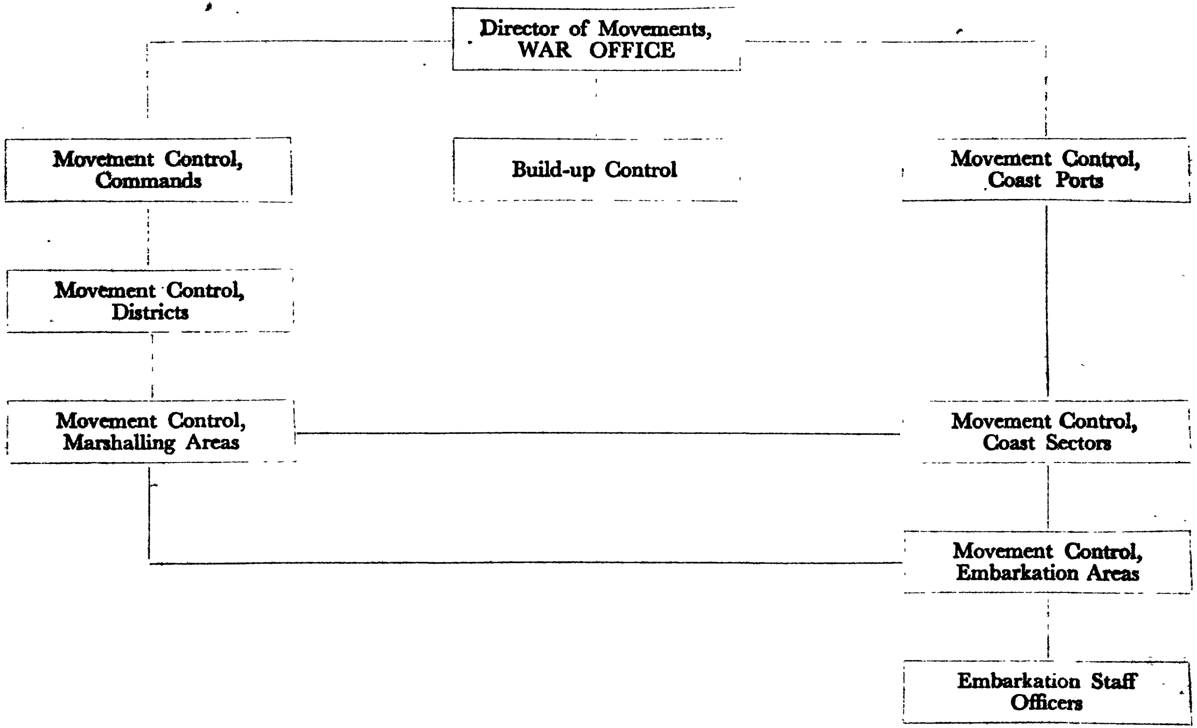
It must now be fairly evident that the collation of such large masses of material in the form of detailed Loading and Landing Tables, and their subsequent conversion into Movement Tables, took a considerable time, and that the plan was firm and determined many months before D-Day. Although many amendments were necessary during the final two months of planning, the general plan remained unchanged from the early part of 1944. This fact, alone, emphasised the need for the greatest secrecy and the most stringent security measures.

I must admit that the order of movement was settled many weeks before I was aware of that fact. Many an hour I sat on a small safe in Movement Control Headquarters with no idea that I was sitting on the whole Order of Battle and the Assault Force Landing Tables; the revelation was made to me after D-Day. It was a great thrill to look at the first entry on the Landing Tables. This first entry gave the exact time that the first man would put his foot on French soil, the vanguard of a million liberators. I often wondered whether the man made his touchdown at the time scheduled, and found out later that he was four minutes late! It was not easy to convert these bulky, almost unmanageable tables of facts and figures into realities in one's mind, and when the operation began it was apparently much more difficult to convert the paper story into reality.

Well, there is the story of all the Movement Orders, as this was what we set out to discover.

One last explanation. I have written about the concentration areas and the limitation of distance to 200 miles from the point of

DIAGRAM OF MOVEMENT CONTROL ORGANISATION—BRITAIN


Director of Movements, WAR OFFICE
Movement Control, Commands
Build-up Control
Movement Control, Coast Ports
Movement Control, Districts
Movement Control, Marshalling Areas
Movement Control, Coast Sectors
Movement Control, Embarkation Areas
Embarkation Staff Officers

embarkation. It should not be thought that each Marshalling Area had a particular section of the concentration area as its own. There was only *one* concentration area for all the Marshalling Areas and their affiliated Embarkation Areas. This was done so that troops could be switched from any part of the concentration area to any Embarkation Area. As far as possible, of course, formations were concentrated as near as possible to the Marshalling Areas which they were expected to use, but there were many exceptions. One large exception was the major part of the Canadian Army, other than that part which took part in the assault. The Canadians were concentrated in the very tip of Kent, facing the Pas de Calais. The concentration did not escape the notice of the German reconnaissance planes—nor was it altogether intended that they should be unaware of the existence of the Canadians here! The result was that large German formations were held in the Pas de Calais long after D-Day, while the Canadians awaited their turn to embark at ports more than a hundred miles westwards. Imagine the German trend of reasoning. Normally, the Canadians lived in Sussex and Surrey; the Canadians had planned and executed the raid on Dieppe; hards had been constructed all along the Kent coast, within view of the German long-range cameras. Then, the Canadians move into their concentration locations close behind these hards. Lastly, prominent signposting appeared on all the roads leading to the Marshalling Areas used in the exercise in the previous year. All these signs could mean only two things. Either the Canadians were going to launch an assault from Dover to Calais, or they were going to launch a secondary assault against the Pàs de Calais after the main attack had gone in elsewhere. Actually, neither of these things happened, but you could not blame the Germans for thinking that their intelligence had done a good job of work!

These variations were very necessary and boldly conceived, but the only effect, from the Movement Control point of view, was that they complicated their movement procedure to an enormous extent. It caused a great deal of cross-movement, which in turn meant very carefully compiled movement programmes to prevent columns from clashing. Even so, there was one day when more than 3,000 vehicles, belonging to three nations, had to cross one set of cross-roads, in three directions. We drove out to see this sight, because it represented the final test of all our paper working. It worked like a charm, and the columns checked through in their different directions with clockwork precision. For eight hours the cross-roads were hardly free from traffic, but there was not a single delay. The traffic policemen were almost done by the end of the day, but we knew after that that nothing much could go wrong; at least nothing that we could not put right.

In the final chapter I have mentioned a few of the more amusing movement happenings. It says much for the Movement Control organisation that these happenings were all we could record in the movement of nearly 300,000 vehicles and equipments.

We have lifted the curtain, and on the stage we see the detailed planners, the men who created the administrative machine that made the launching possible. The next chapter discusses the story of planning through all the alarums and excursions which led up to the final full-scale rehearsal in September, 1943.

CHAPTER VI

ACT I—ENTER PLANNERS

THE TASK OF THE HOME COMMANDS

WAR OFFICE DECIDED at an early date in the planning that it would not be possible for them to organise the detailed plan required to house, feed and despatch the invading armies. Accordingly, they delegated the responsibility to Home Commands. The situation thus became one in which the War Office laid down the general policy and the Home Commands implemented this policy in detail, each according to their own peculiar circumstances.

This was a lead in the art of decentralisation which, it is now fair to say, Home Commands learnt only after bitter experience. There was the natural tendency, during the early planning, to over-elaborate work at high level; with the resultant stultifying of initiative at lower formations. But this error produced its own corrective during the first exercises, when staff officers at higher levels were inundated with queries, which should never have reached such a level if the right amount of decentralisation had been practised initially.

Nevertheless, the breath-taking task, thrust upon Home Commands, was moulded into a plan according to the outlook of the senior administrative officer in each Command.

I remember visiting other Commands shortly before D-Day to see whether our own Command plan was lacking in anything. I was astounded at the diversity of styles used in mounting the operation. No two Commands had common details, although the overall plans were naturally identical. Each lay-out reflected the character of the Command staff concerned. It was a unique opportunity to appraise one's colleagues by the results of their efforts.

Fortunately, the answer was the same in all cases. The departing troops had nothing but praise for the arrangements made for them . . . and I learnt a lesson on being dogmatic about methods. Quite obviously there was no one absolutely right method, but I had not realised this, immersed as I had been in the individual plan being prepared by my own planning staff. I, who had prided myself upon maintaining an open mind, had fallen badly into the trap, and had become hide-bound through too close and too long proximity to our own plan. A salutory lesson, indeed!

However, much had happened before this Cook's Tour of "Invasion Corner" could take place; and it is about those preliminary days I now want to write.

Detailed plans for invading the Continent were first elaborated in 1942. During that year specimen camps were laid out and small forces were moved through them. Loading and Landing Tables were prepared, and all the details of the real thing were rehearsed. Valuable lessons were learnt, and it is not without amusement that I turn back to the first administrative instruction detailing the methods to be employed in mounting the operation. This instruction consisted of a few pages of foolscap, extending to some sixty-five paragraphs; I have no doubt the authors thought they had accomplished a *magnum opus*, and that nothing could have been omitted from such a document! In fact, some months afterwards I was planning side by side with one of the planners of this particular exercise and he told me: "Of course, we've done all this before in Exercise C. . . ." He was frankly amused at the idea of having to repeat the old stuff again.

When the final administrative instruction for the operation was produced it had fifty-six sections, and more than one thousand paragraphs, and, additionally, maps, traces, tables and appendices!

Rather a fulsome increase from sixty-five paragraphs.

And the officer who was so sure that it had all been done before —well, he was withdrawn from the planning staff, a sick man. Later he went to France, and as I write this I have just received a letter from him. He is in hospital, having cracked up under the strain. "It was the planning that did it," he says.

To return to the administrative instruction—it was so voluminous that the War Office printing establishment would not undertake the task of printing it.

However, in 1942, a skeleton drill was worked out. Very secret reconnaissances were carried out and the camp sites selected. The framework of the organisation was thus born.

In the summer of 1943 the tempo quickened. High-grade staff officers were disappearing continually for long trips away from headquarters. Only a select few saw the results of their visits. The midnight oil began to burn. Simultaneously the headquarters began to show an abnormal interest in Combined Operations.

Exercises were held in rapid succession in which the method of maintaining a force established in a European theatre was expounded. Every staff officer at Command Headquarters had to know how a force could be maintained on the Continent without railways and without ports. The exercises were based upon the assumption that railways and port facilities would not be available for, perhaps, three months.

It is important to appreciate the significance of this assumption. No railways and no ports for three months! How could sufficient supplies and equipment be landed without ports? How could supplies and equipment be transported for a large invasion force without railways?

It is safe to say that, two years ago, if one had asked any Allied Commander whether a force of some two million men could be maintained in a theatre of war without railways and ports, the answer would have been, "Certainly not".

History has proved that those now remote exercises were nearer the truth than we thought then. At the time most of us believed we were dabbling in the occult.

The whole gamut of Combined Operations was studied. First, there was the preliminary mounting of the force in this country. Next came the move across the Channel, and the establishing of a bridgehead. Thirdly, there was the extension of the bridgehead into a secure foothold. Lastly, came the breakthrough into open country, and the pursuit of the defeated enemy.

Now if you had your choice of which operation you consider would be the most difficult to complete successfully, which would you select? Well, the answer was, irrefutably, the organisation of the pursuit. Remember, no ports and no railways.

We played with cloth models and maps of the very country that our troops have since passed over. By design or accident we did not land on the same beaches that our forces actually used; otherwise, the exercises were a true rehearsal of the "big show".

Cloth models were scale models of the country built up under canvas on the floor of the model room. They often measured 30 feet by 30 feet and took 24 hours to prepare. Oh, the back-breaking work of pinning miles of unwilling tape (representing roads and railways) to the even more unwilling canvas!

Having learnt the lessons from these exercises, during the early months of 1943, we now turned to the immediate task ahead. By the end of May plans were sufficiently developed to establish a Q Planning Branch. This branch was completely segregated from the other staffs, and a 24-hour guard of military policemen was mounted at the approaches to the offices being used for planning. No one not directly connected with planning was allowed in these offices.

All waste paper was treated as *Top* Secret waste, the highest secrecy grading. It was packed in two mail-bags slung on hooks outside the door of the clerks' offices. Was it an omen that one of the bags was German and bore the legend "Hamburg"? The bag was an old German mail-bag. How much Hitler would have liked just one bag full of that waste consigned to Hamburg!

In my Command, six officers were detailed for planning—and two of these had additional responsibilities superimposed. Not a very grandiose beginning for the greatest amphibious operation of all time.

Two of us were detailed to write the operational side, and also to co-ordinate the whole plan. We were given five days to provide the first draft. It was completed in five days, but neither of us had any rest during that time; we worked in our office until sleep claimed us, when we went to sleep where we sat, to wake eventually and start again. What a beginning!

For the next year I never knew peace of mind. Always I asked myself: "What have I overlooked? Will this particular plan work? Have I laid on something that is a 'nonsense'? When is D-Day? Where will we land?" And, oh! a hundred queries that the general public were asking in more vague fashion, but each of which was vital to me.

As a very small cog in this machine, I was, naturally enough, given only that information sufficient to permit me to do my work. Security forbade that I should know D-Day, at this stage, or even approximate dates for completion of the plan. What this lack of information meant to me I can never properly reveal. Always, there was terror in my heart that the plan would not be completed in time. This state of mind was endured for thirteen months; and during the last three months it was literal anguish.

What was the problem? What was the task we had been set, in general terms?

Well, it was something like this.

In our initial briefing we were told that selected ports and hards had been designed to take a certain maximum daily flow of personnel and vehicles. The period of this flow was indeterminate; it might go on for ten days or a hundred days. (It went on for more than a hundred days, actually.)

Next, we had to provide accommodation for approximately 500,000 troops in concentration areas within the Command boundaries.

These were the two facts upon which all our early planning was based.

The queries were immense. How many of the troops now living in the Command would be able to leave existing accommodation? What would be the final ceiling figure for the Command? How could this number of troops be housed additionally to the normal occupants, when the overall ceiling of the Command was 600,000, and practically half the Command was reserved for Marshalling and Embarkation Areas and therefore not available for concentration?

This one problem resulted in a series of map-marking episodes which eventually led to the introduction of two draughtsmen, because staff officers were spending half the day and most of the night marking out accommodation on maps.

To complicate matters, the one officer who knew every bit of accommodation in the Command could not be consulted as he was not yet included in the planning staff. Meanwhile, he went on allotting and taking away accommodation quite merrily, unaware that over his head we were redisposing in great blocks the whole of the accommodation in the Command, upsetting two years of his carefully-thought-out work.

Plans for the lay-out of Marshalling Areas were in the embryo stage, and the movement drill was then unformed. This meant that large coastal areas were earmarked for marshalling, leaving only about half of the Command for concentration areas.

Everything was laid on according to the "book". The concentration area forward boundary was kept well to the rear of the Marshalling Areas, so that congestion would not take place.

The whole concentration area was divided into blocks of accommodation (drawn rather hopefully on the Command map), each block designed to hold approximately five thousand men.

This first "cock-shy" was then sent out to our Districts, who promptly returned it in almost unrecognisable form. When the amendments had been superimposed we had a totally new lay-out! But new lay-outs became accepted after the accommodation plan had been redrafted on no fewer than five occasions.

But we did not know this, and in the early days we looked at the map and felt that one really big hurdle had been overcome. Little did we know that this "final" lay-out would be less than a memory in a month. Nor did we know that the War Office would one day ask us to squeeze more than 700,000 bodies into an area which could take barely 600,000.

The concentration areas, once provisionally settled, became the least important areas. In these areas units lived as normal and added only a few difficulties to normal administration—or so we thought, anyway.

Far more intriguing were the Marshalling Areas, for in these areas units had to be "hotel serviced".

Two restrictions were imposed at the outset. Firstly, the Marshalling Area must be 100 per cent concealed. Not a suspicion must be raised that troops were to be assembled there. Secondly, the troops must be fed like kings while they were in the Marshalling Area, and sent off in tip-top fighting spirit and morale.

Well, that probably sounds simple enough. But was it? Let us look round the first few thoughts that came to our minds.

The camps could not be too widely dispersed as the unit commanders would then lose control of their men; yet they had to be entirely hidden. So a balance between dispersion and concealment had to be worked out for each individual camp. All tentages and hutments would have to be painted *before* erection. All tracks across fields must be rigorously prevented.

As the camps grew apace, aerial photographs showed them to be very well hidden; but when they came to be occupied, acres of virgin woodland began sprouting smoke from the cookhouse fires. And so experiments had to be carried out with various types of smokeless fuels.

Next came a nicety of judgment as difficult as any required of Solomon. For reasons explained later, troops in Marshalling Areas had to do their own washing. What a picture it made as it flapped like rows of signals in the sun. How the enemy would have been able to pinpoint Marshalling Areas. At one time this problem had resolved itself into "No Washing" versus "Brown Towels". If something had not happened towards the final days of planning I'm afraid that the troops would have had to be provided with brown towels, because "No Washing" was obviously not acceptable.

Not that these thoughts yet disturbed our minds; we went gaily ahead with our plans. These were the knives that gouged giant chunks out of the plan at a later date. Never a day passed without a new spanner being thrown into the works. The repercussion of one small point often meant the reshaping of half a dozen major plans.

For two months we battled on, formulating, destroying and rebuilding until it seemed that no factor could have been overlooked. Everything within human ingenuity seemed to have been lavished on this creation. Other planning factors had become more firm in the interim.

The outlines were filling out, but much remained to be done; much not dreamed of; still, by the end of July, 1943, we were optimistic enough to feel ready for the day.

I suppose we should have been warned by the code-word for the planning that this was not the real show, but none of us wanted to believe that it was anything but the actual invasion.

As I watched the camps take shape and the stores dumps grow I felt that nothing could ruin this enterprise. It was solid and real, carefully tended, and even lovingly fondled.

With adventure in the summer air, I swept through the English countryside with a new problem to be solved each day.

Where to lay down a petrol dump for one area? Well, what could be better than the site on which the Battle of Hastings was fought? And there I laid down a petrol dump! Did the shades of Harold and William the Conqueror wander round the battlefield and wonder what the strange new smell slinking across the meadows could be?

What could be nicer for an Embarkation Area than the point at which De Ruyter and the Dutch fleet turned back down the Medway after their daring voyage up the Thames in 1667? So there were laid out some hards, their little "chocolate-blocks" already taking on a weatherbeaten appearance as the tides of the Thames lapped between their crevices. At this place a stone bore the legend that this was the highest place reached by the Dutch in their last invasion of Britain. To this lovely spot I sent a Port Detachment to await D-Day.

Could any place more apt than the Kentish cliffs be chosen for headquarters of the invasion force? There, across the Channel, lay the enemy, clearly visible on a fine day; and here beneath my feet could be heard the rumble of machinery and the whirr of drills as a complete underground headquarters was burrowed from the cliffs beneath me.

I wonder if the Germans ever knew we were constructing this vast headquarters? While their long-range cameras were focused on the innocent cliff walls, did they reveal anything of the hive of industry below ground?

Everywhere I travelled to see the results of our planning I found our plans were an almost uncanny superimposition upon British history.

Even in the wilds of the marshes around the Cinque Ports was an activity which by a strange freak of fate could have saved the one-time ports of Winchelsea and Rye from desuetude following the recession of the sea in these parts. For along the marshes and along the seashore was hidden the last word in technical perfection in the way of port facilities. Complete mobile ports were brought by every means of transport, and hidden piecemeal along the coast. Tiny harbours and water-locks concealed the structures that would soon be established off the Normandy beaches, a tribute to the ingenuity of British engineering and resourcefulness. Shades of our cloth-model exercises!

These special Port Construction Forces were one of the highlights of the many surprises in store for the Germans. Special groups of engineers, with their prefabricated ports (known as Mulberries), stood by to convert a beach into a modern port almost overnight. Without them the rate of flow of reinforcements could not have been maintained at a pace sufficiently fast to hold back the German counter-attack which eventually stubbed its nose on the defences around Caen. Without them the pursuit of the beaten Germans could not have been carried out.

It was history in reverse, too, that the Romney Marshes, which boasted such a smuggling legendary, should be used once more for smuggling—but this time it was smuggling outwards and not inwards.

Here, too, swarmed in the U.S. Eighth Army Air Force to set up their nearest fighter fields to the enemy. All summer the tented camps nosed their way into the air around the east coast while the skies filled with the thunder of aircraft.

This was the more glowing side of the great plan as it unfolded during 1943. Along the country lanes the slowly toiling infantry wound their way in longer and more arduous marches, reaching new heights in stamina and endurance. On the South Downs the roll of tanks of all sizes and shapes, locked in mock battles, sounded like an incessant drumming—an omen that hung perpetually over the Downs by day and by night. The short bursts of small arms fire, intermingled with the heavier thump of the tank and anti-tank guns, continuously echoed and re-echoed to the seashore along the south coast. The nights were split by the flashes of tracer bullets curving in parabola through the sky.

Along the south and east coasts the movements organisation was teeing up for their biggest-ever test.

In the midst of this excitement, orders were received that the code word designating our planning was dead. In substitution came "EXERCISE HARLEQUIN". The level of security was reduced from "Top Secret" to "Secret".

I could have cried. So all our planning was just for a damned exercise. The staff who had been keyed up for weeks slumped visibly; interest fell off, and it was not until the detailed work of the exercise developed that interest and morale began to rise again.

There were those who believed that the exercise was a double bluff, and that this was the real show anyway. I knew better, because certain provisions, vital to the real show, had not been laid on, and I knew this could not be the actual invasion.

It became apparent, quickly, that although the planning had been carried out meticulously and in great detail, there were many loose ends to be tied up, and the necessity for a rehearsal became abundantly clear.

Concentration began almost at once. Many of the troops were able to concentrate in their normal locations, and so no move was necessary. Others had to be moved from distant parts of the country to their exercise stations. Landing craft began to filter, by twos and threes, into the ports we were going to use. Most of them still bore the bright colourings of the Mediterranean camouflage colour scheme. Many hulls were battle-scarred and bullet-pocked.

The embarkation was to take place on one day only, but for two more days formations were to move through the Marshalling Area and Embarkation Area organisations (now firmly nicknamed the "sausage machine"), and when they reached embarkation points, instead of embarking they would continue their land movement and disperse.

It became a point of some amusement that the dispersal of the force became a greater headache than the movement for embarkation. This was something which had not been planned, and accommodation was full to capacity, and overflowing in some places.

After we had grasped the enormity of the problem of finding individual homes for some thousand different units on dispersal, we settled on a simpler answer. This was to return everyone to their original homes in a sort of circular movement: Home—Marshalling Camps—Embarkation Points—Home.

This also had snags, because the assault force moved to Marshalling Areas some days before the exercise D-Day, and their normal accommodation was filled by later phased troops before the exercise began. This meant that when the assault force passed through the "sausage machine" on D-Day, and turned for home, their homes were still occupied by troops who would not be moving through the "sausage machine" for another two days. This almost stumped us, but the principle was retained by bypassing the assault force into bivouacs for forty-eight hours, and then they moved back into their homes.

Troops which came into the Command for the exercise were dispersed immediately to their home stations in other parts of the country, and within a week everything was normal again.

But I have overreached myself. For long nights before exercise D-Day we pored over loading tables provided by the force—in this instance Second Army, who had taken up their tactical headquarters in the underground H.Q. built into the Channel cliffs. A similar headquarters was established on the south coast for troops passing through Embarkation Areas in Southern Command.

Page after page of these loading tables had to be dissected and replanned into movement tables. The Loading Table was, as I previously explained, the Force programme of units and detachments to be embarked by tides and sectors, such as in this example:

D Plus 1: First Tide	*NEWHAVEN SECTOR*
Battalion, Royal Scots	800 men 150 vehicles

From this scanty information Movement Control had to work out the movement of this unit from its concentration location to the Marshalling Area camp allotted to it. All timings had to be co-ordinated, and units moving across each other's route on their way to port were quite common. This is where the Traffic Control side came into the picture. Careful timings had to be given to each column, and Traffic Control points were established to ensure that these timings were maintained. No road congestions could be allowed, especially in the forward areas. Civilian traffic and essential military traffic not connected with the Force had to be maintained as nearly normal as possible.

Large areas around the Marshalling Areas were scheduled as Restricted Areas and a cordon of police thrown around. A system of priority markings were adopted for vehicles considered essential to the maintenance of the exercise.

Close liaison had to be maintained with the Civil Regional Offices, who were kept fully informed of the scheme. Civil police helped with the security patrols. A list of essential traffic was drawn up and civilian vehicles given priorities according to their considered urgency of movement.

High in the list of priorities were telephone repair parties—as the maintenance of communications was an essential feature of the plan. If communications failed the operation would break down.

Civil N.F.S. vehicles were also a high priority. They, too, had a vital job if enemy bombing interfered with the programme. Some of the coastal towns were particularly liable to enemy attack. Some were, in fact, attacked.

Civil ambulances were given the unique privilege of driving *against* traffic along roads which were made one-way routes to prevent congestion through double columns of vehicles. In each Marshalling Area a complete circuit of one-way roads was devised. Thousands of signs were prepared and appeared like mushrooms almost overnight.

As the machinery began to operate the overriding importance of Movement Control became more and more obvious. Yet, always, against the demands of Movement Control to keep the flow steady had to be weighed the necessity for embarking the force in tiptop condition. The two considerations were frequently diametrically opposite, and the greatest patience, goodwill and knowledge of each other's responsibilities was required of the various branches of the staff.

It says much for the British ability to compromise, that plans were eventually evolved which satisfied both requirements.

In the early stages of planning, however, there was a constant straining and jockeying for position on the rails. Movement Control would devise a traffic circuit, for instance, which was ideal from their point of view for Force movement along the easiest and most accessible routes to embarkation points. Then the rest of the staff would argue that the routes were not suitable for the installations in the Marshalling Areas, and that certain routes would have to be reserved for administrative vehicles. A new plot would be argued out, and after the burning of much midnight oil a compromise would be reached; only to find, usually, that the whole thing was sabotaged next day, anyway, because the location of an installation had been changed and new administrative traffic routes were required!

It required something more than patience to watch the results of six or seven weeks' work disappear in smoke because one single factor had been changed, or perhaps not fully appreciated in the original lay-out. Above all, remember, we had been given limited resources in men and vehicles, and these could only be worked to a certain point. One unsuitable administrative route, calling, say, for a twelve-miles detour, might well upset the whole transport machine. We were down to bare bones; there was no lavish supply of anything, and every man and vehicle had to be used to the greatest advantage. Our strategic reserves were very small, and enemy interference or large-scale disorganisation would have set us some tremendous problems.

There was one really bad moment, a few days before exercise D-Day, when Movement Control began to talk vaguely about abolishing the Reception Sub-Area, and converting it into a fourth Marshalling Sub-Area. In those days there were three Marshalling Sub-Areas plus one Reception Sub-Area in each Marshalling Area. The Marshalling Sub-Areas were camps in which we had provided full hotel service. The Reception Sub-Area was the area into which troops moved initially, got a cup of tea and then moved on. It was merely a temporary halting-place where their entry into the Marshalling Sub-Areas could be controlled.

The idea of Movement Control, to convert this Reception Sub-Area into a Marshalling Sub-Area, meant that we would require an increase of hotel staffs by one-third of the number already employed! As we had stretched the resources of the whole country to staff the existing areas, this apparently simple change would have broken the camel's back irrevocably. However, the evil day was staved off, and the Reception Sub-Area remained for the time.

Then on the day before D-Day the senior administrative officer discovered that units were having to wait many more hours in the Reception Sub-Area than had been envisaged, and he demanded that full meal service should be laid on.

Improvisation triumphed, but the remarks of the catering staff were unprintable. On the eve of D-Day cooks were switched from one camp to another, fuel was rushed in, cookhouses brought into action—even built overnight—and D-Day dawned with the new "hotels" all staffed and ready for customers.

One lesson of that exercise proved to be that the cooks were so thin on the ground that they could not have managed another week. They had to maintain a 24-hours-a-day meal service with a 12-hours staff.

Meanwhile loading of the assault force had begun. With the enemy twenty miles away landing craft were loaded at Dover, Deal and Folkestone. Off the coast a bevy of destroyers and smaller naval craft maintained a constant patrol.

A last-minute change of plan resulted in the embarking of a force of anti-aircraft gunners and their weapons.

I shall never forget the sight of this armada sailing from the Channel ports, less than fifteen miles from the enemy guns. D-Day was perfect, there was no haze in the Channel. The muzzles of the anti-aircraft guns could be seen pointing skywards from the landing craft. The blue-grey destroyers buzzed about on the outside, and even sailed within a few miles of the French coast, the cheekiest venture I have ever seen. Twelve or thirteen destroyers played ring-a-roses opposite the Pas-de-Calais for two days, and for a long time there was not a sign of life from the German gunners dug into the Calais cliffs.

The whole thing was too impudent for words, and eventually Jerry did respond to this tantalising exhibition and a battle between ship and shore began, but the destroyers continued their meanderings until the lines of landing craft had disappeared in the direction of Dungeness.

Apart from the few shells fired at our destroyers, the only other sign of enemy activity was an intermittent stream of reconnaissance planes. Be sure they marked our activities during those days. Well regulated as our traffic streams were, the camps must have been pin-pointed, and a very full picture of our invasion plans worked out by the enemy.

In the light of later events this information becomes of some vital significance, and the apparently unnecessary advertising of our intentions took on a new meaning.

Certain it is that the German defenders of the French coast were not taken in by our paradings. There was much more delicate bluff and counter-bluff taking place just below the surface.

The exercise was, you will notice, timed to coincide with the invasion of Italy. A show of strength in the Channel might nail down the German divisions in France. Nothing of the sort happened.

While we were blustering about in the Channel, the Germans were actually transferring seven of their best divisions from France to Italy. In plain words, it was one up to the German intelligence.

As we listened to the stories from our own intelligence, it looked as though the Germans had really come out on top in this battle of wits.

But had they? The short-term answer was that they had interpreted our thoughts correctly, and that our bluff had been a little too pretentious, and a little too simple.

But—and this is a mighty important but—when the real D-Day came, the full strength of the German defences was in the Pas-de-Calais, whereas our blow fell in Normandy. What is more, during those vital first days of invasion, when we were building up a strong land force in Normandy, the Germans were holding tightly on to the Pas-de-Calais, for the reasons I explained in the last chapter. Their military reviews, written and broadcast, during the first few days after D-Day showed that they still expected a landing in the Pas-de-Calais region. This fear, and this fear alone, immobilised sufficient German troops to allow General Montgomery to eat up the German forces piecemeal!

So that while the Germans thought they had scored a tactical success during Exercise Harlequin in September, 1943, what a price they paid for their deductions in June, 1944.

The planning staffs did not know that then. We fumed at the lack of liaison, when our carefully-hidden preparations were ruined by the publicity given to the arrival of 30,000 civil defence workers, who had been rushed to the south coast at a few hours' notice. The newspapers made full play of this fact; and as far as we were concerned secrecy was ruined from that moment.

Even worse from our point of view, gangs of workmen were busy constructing hards plumb in the middle of Dover Harbour with not a scrap of camouflage to shield them. Occasionally a few shells landed nearby, but the work went on just the same.

What useful purposes did Exercise Harlequin serve? Well, there is the broad strategic aspect I have mentioned above. In addition, the staff saw their plans in actual operation for the first time. Revolutionary changes were to follow. The Force to be embarked benefited beyond degree, and a host of small flaws were picked out at once. Most of all, everywhere, we found gaping holes in the security structure.

The impossibility of hiding the fact that a large-scale operation was in process of being mounted was one fact which emerged. Then, the cramped conditions in completely concealed camps caused a heavy fall in morale. The inactivity in concentration areas further contributed to a lowering of spirits.

Yet we had gone to almost unbelievable lengths to ensure the comfort of the troops taking part. We even produced their own newspaper for them, the first time that such a newspaper was produced for the field-force at home. It was called *Tiger News*, a name which illustrated that it was produced by South Eastern Command whose sign was a tiger's head.

Tiger News was an instant success, although only two pages. Fifteen thousand copies were printed daily; and the publication of this newspaper was itself a saga of improvisation.

The definite decision to publish a newspaper was not taken until seventy-two hours before the first edition was due to go to press. The working staff consisted of one editor-cum-sub-editor-cum-reporter, one compositor, two lino-operators, and three general assistants.

The printing presses of the *Sussex Daily News*, in Brighton, were loaned by the proprietors, and *Tiger News* was printed, each morning, after the *Sussex Daily News* had been run off the machine.

Then three military cars would begin a wild race through the countryside dropping off papers at Command Supply Depots, where unit motor cyclists collected the parcels and raced back to their units so that the papers could be on the breakfast table!

How far the publication of *Tiger News* influenced the exercise I do not know; but the willingness of this scratch staff, and the untiring co-operation of the civilian staff of the *Sussex Daily News*, in the dim hours before dawn, were an inspiring augury to the success of any operation infused with such a spirit.

A day in the life of the editor-sub-editor-reporter might be illuminating.

Breakfast at ten o'clock. Report to the office at noon.

The next hour was spent preparing a "dummy" or outline copy of next day's paper. Lunch was from one o'clock to two o'clock. Then back to the office and the serious work of writing the "feature" page began. The sports column was written first, then the Daily "Quiz", followed by the main feature article of the day. This main feature article was always devoted to a military topic—the experiences of soldiers in the desert campaigns, North Africa or farther afield; the new miracle supply organisation of the British Army or some similar topic.

And so through the evening until by nine o'clock the whole of the feature page was written. Meanwhile, at seven o'clock the despatch clerk (circulation manager, to you) and printing staff assumed their duties. As the copy flowed out to the machine room the stories were converted to type and the compositor got busy with the formes.

At nine o'clock (supper of fish and chips intervening) the editor joined the compositor on the "stone", and superintended the make-up of the page. This went on until midnight, by which time the feature page was all set up in type.

From midnight until two a.m. the main news of the day was sifted and the front page made up. Most of these news stories were, naturally, common to those printed in the main news page of the *Sussex Daily News*, and by a process of extraction, condensation and reheading, the same type as used for the *Sussex Daily News* was transferred to the *Tiger News* forme. At about two-thirty a.m. the forme was locked up and the first "pull" made. The pull approved, the type was impressed on to papier mâché which in turn formed the mould from which the metal plates were cast.

By three o'clock the printing presses were running and *Tiger News* reached another edition.

The editor then became circulation manager until four-o'clock, when the last van was seen off on its delivery round.

And so to bed by five a.m., with the night porter at the hotel very suspicious of this rather dishevelled, printer's-inked officer, who kept such frightful hours.

Sleep with the sound of the waves lapping the Brighton sea-front; and once more awareness as the chambermaid produced morning tea at nine o'clock . . . A nice holiday by the seaside!

That performance went on for three weeks. Not a long time in one's life, but after the rigours of planning for some months this was almost the final straw, and the editor had a black-out the day after *Tiger News* published its last edition.

Probably more important than the contents of *Tiger News* was that the troops felt this was their own paper, produced by military men for military men.

On D-Day the circulation carried on, and papers were delivered to troops as they boarded the craft. One motor cyclist even left his route to the embarkation point to collect his unit's copies . . . That gesture alone made the whole venture almost worth while.

So much for Exercise Harlequin.

Later, we held an inquest in the Home Commands at which all the weaknesses in the plans were carefully exposed, and decisions taken to remedy them. Next came the appreciation of Second Army on their experiences as the "patients" of the plan.

One significant fact was stated in the Second Army report, which probably influenced the story of the eventual invasion more than any other single factor. Second Army considered that embarkation from the ports and hards of the Channel coast, i.e.

Dover, Deal, Folkestone, was not practicable as long as the German long-range guns were in being along the Pas-de-Calais. This decision was probably strengthened by the fact that one German shell had fallen plumb alongside the pier at Folkestone! This pier was reputed to be one of the coastal batteries' ranging points. Notwithstanding this Second Army appreciation, the work at these places continued.

As the autumn wore on the lessons of Harlequin were absorbed, and new works set in motion.

For a period none of us knew quite where we stood. Harlequin had torn the veil of secrecy from our activities. The policemen still stood guard over our offices, but planning was becoming something of a joke about the headquarters.

Then, on 1 December, 1943, "Harlequin" died.

A new code word was born. Everything reverted to "Top Secret" again, and the military policemen carried themselves with a new-found sense of importance.

The real job was on! This time there could be no mistake. It *was* the real thing!!

Each day, henceforth, the Planning Committee met, and the mills of God got grinding with a vengeance.

The next few months leading up to D-Day are best described by a diary which I kept in note form. I have tried hard to depict the atmosphere of the planning meetings especially, for in their urbane nature, and the humour that soared irrepressibly, in lighter moments, through the solemn planning, I feel you have the secret of the greatness of this nation.

Irreverently I had pinned on the Planning Office wall the notice "Nihil Bastordorum Non Carborundum", which being freely translated may mean, "Don't let the b . . . ds grind you down".

It was a gift from one of Canada's most enlightened staff officers, Major "Billy" Pope, who returned to regimental duty after a brilliant tour of duty on the Canadian Army General Staff in time to join the Canadian Division which went to North Africa.

He died among the first flight of Canadians to set foot on the beaches of Sicily.

His motto still remains; his spirit still remains—and if there was any extra ounce of effort needed to place one more nail in the German coffin, I found it by glancing at this notice which typified the humour and courage of a great soldier.

It typified also the Third Canadian Division, part of the assault force which smashed through the Normandy beaches.

"Nihil Bastordorum Non Carborundum."

CHAPTER VII

ACT II—THE PLAN UNFOLDS

INVASION SECRETS

THIS WAS THE real thing. Everyone buckled down to work with a new zest. Unfortunately there was something of a hiatus while the lessons of Harlequin were absorbed. Impatiently we waited for the reports of Second Army and 21 Army Group.

One thing we knew—one solid fact at last—we must have our plan completed and the organisation ready to function by the 1st of April. That meant that all installations had to be sited and fully stocked ready to operate at an hour's notice.

The various reports on Harlequin came in. They were "vetted" and we heaved great sighs of relief when we discovered that Harlequin had stood up to the test in most respects. We had converted paper into realities without a major error.

The whole exercise had worked so smoothly that the plan would be based on the general Harlequin lay-out. The field-force had discovered some rather important flaws, and these had to be put right. We had interpreted the 100 per cent camouflage policy literally, and this had caused considerable cramping of troops, which was undesirable during the long wait which might precede the actual operation. We had to redesign our camps to give the troops more dispersion. Another important point affecting the maintenance of morale was the distance troops should march between Marshalling Areas and Embarkation Areas. One pioneer company had marched fifteen miles with full packs, plus a little extra, and they had arrived at the embarkation point flaked out. This was a bad thing, and the field-force laid it down that the maximum distance to be marched must not exceed five miles. Eventually this distance was further reduced to three miles. Harlequin exposed one vast weakness—the security aspect. In the real show troops would be briefed, that is, given details of their part in the operation, the places of landing and a summary of the general plan, probably forty-eight hours before leaving their Marshalling Area camps. This would be the crucial time from the secrecy point of view. Every person not briefed would have to be kept apart from the briefed personnel if our intentions were to be *perfectly* protected. But this was palpably impossible, and the next best solution would be to seal the Marshalling Area camps in which briefing took place, so that no one could enter or leave until the operation was launched. Elaborate precautions were worked out to ensure absolute security. The camp staffs would have to wear some sign denoting that they were not briefed—and the happy solution was to tie a piece of flannelette (not the household type, but the military flannelette used for cleaning weapons) to the left shoulder lapel. All camps used for briefing would have to be protected by a complete perimeter of concertina wire, and security patrols would provide a twenty-four hours a day guard to prevent ingress and egress.

So far we had worked on the assumption that absolute secrecy about the whole operation was possible. This assumption led to much unnecessary worry, and security measures became almost a menace to the success of the operation. Some clear line of demarcation between the possible and the impossible was needed, or else we were in danger of swamping our plan with restrictions.

Harlequin—small-scale prelude of the real thing—had shown that the Germans could not remain ignorant of large-scale troop movements in the southern part of this country. We had to accept the fact that the *mounting* of the operation would not be a secret to the enemy. The collection of masses of shipping in our southern ports would, itself, be sufficient indication of the real thing; the collection of some 10,000 ships in our ports, shortly before D-Day, would not pass for bluff. Naval concentrations would also be made, and these could not be hidden entirely. The Air Forces were scheduled to carry out large-scale bombing programmes; these would herald the operation. With all these factors accepted, it was agreed that total secrecy was not possible.

Next, we had to define to what extent secrecy could be attempted. The answer was a surprise. It was that we could only expect to conceal the date of the assault and the places of landing. From that moment this became the guiding principle of all security regulations. You will see that even this principle was difficult of application.

In the sketch lay-out of a Marshalling Area camp you saw the actual camp area only. All around the perimeter we had to set up many military installations. The R.A.S.C. had to provide a Detail Issue Depot for the issue of rations and petrol; Troop Carrying Platoons, for the transport of personnel to Embarkation Areas; a Mobile Field Bakery, for baking the camps' requirements of bread. R.E.M.E. surrounded each area with Vehicle Recovery Posts, for dealing with vehicles and wheeled equipments that had become casualties. The R.A.M.C. opened

Casualty Reception Stations for the reception of medical casualties. The R.A.O.C. had to provide an Ammunition Depot, and a Stores Depot for the issue of clothing, stores and equipment.

Shortage of accommodation reduced us to extraordinary improvisations. A cinema became a workshop; a school was converted to a hospital; a barn in a timber yard was turned, overnight, into a Detail Issue Depot issuing 20,000 rations each day; a country mansion—the very house in which Lloyd George drafted the Armistice terms for Germany in the last war—was to be used as an ordnance depot; a mineral water factory housed a mobile field bakery.

The static staffs for five Marshalling Areas only, totalled 755 officers and 17,533 other ranks. The figure rose daily. The Assistant Adjutant-General smiled grimly at these figures, and commented at one planning meeting that with drafting out of the Command continuing at the present rate it would be impossible to estimate the availability of personnel. "I suggest," he went on, "that we take the line adopted by one Army Commander of this Command who, when War Office took too many of his troops, rang them up and said, 'If you take one more man from my command I will turn South Eastern Army around from the coast and march on Whitehall'. The threat worked too."

Needless to say the Army Commander was General Montgomery!

For months we had been piling up great stocks of petrol in non-returnable tins (flimsies), in anticipation of enemy interference with normal bulk supplies. We were bursting with petrol depots, holding more than three million gallons. Then came a bombshell. It was decided to cease using the old flimsy tins, which had been the standard method of transporting petrol in the British Army since war began. The flimsy, considered wasteful of material because it could only be used once, was to be replaced by the more strongly-constructed "Jerrican", which could be used again and again. In fact, the changeover heralded a revolution in military petrol supply. Formerly all petrol was tinned in this country or at base installations in a theatre of operations, and then transported by rail and road to the battlefronts. The new system, perfected in every detail, aimed at a new level of efficiency and economy of transport. It was, in brief, to transport petrol from this country to the battlefronts by continuous pipe line. Already, in great secrecy, the pipe line had been laid across the south of England, its easternmost extremity secreted along a shingle beach within twenty-five miles of the enemy. A specially constructed flexible pipe capable of withstanding the stresses of the English Channel currents lay ready for immersion. Hundreds of prefabricated petrol installations were hidden in ships along the coast, for erection in France, to eventually tap the pipeline from England.

Special construction units stood ready to lay pipelines across France at the rate of fifteen miles a day, and thus save the necessity of transporting petrol by road or rail.

Finally, immediately behind the battlefront, tanks were to be erected, from which the Jerricans would be filled.

This was an ambitious plan—petrol pumped from Britain to Germany. Its success would govern the speed of our advance, but no one connected with this plan had any doubts about its success.

That was the eventual plan, but to us it was nothing less than a nightmare. There was no possibility of consuming the worthless stocks of flimsy petrol held by us, and there was no room to stock Jerricans. Another blow fell—each vehicle had to carry five extra Jerricans when leaving this country. We had to find a home for nearly half a million Jerricans almost at once. We requisitioned fields, and drafted in a field butchery to prepare the concrete bases, and take in the petrol. It says much for the versatility of the butchery that they offloaded and stacked two million gallons of petrol in under two weeks.

Petrol remained a problem right up to D-Day. One week we would have too much, and War Office would be worrying us to accept more trainloads, as their factories were turning it out faster than they could store it. The following week we would be begging for trainloads because formations were drinking petrol at a fabulous rate in last-minute large-scale exercises. Then just as we felt we had regulated the flow nicely, large-scale exercises stopped as though cut off by a guillotine, and we were left with two million gallons of petrol for which there was no outlet.

The Home Guard came into the picture more and more as planning advanced. Four thousand of them were trained for anti-gas duties, in case the Germans swamped our Embarkation Areas with poison gas. Three thousand were drafted into a coastal patrol organisation to give warning about any venturesome enemy patrols which might land to seek out our dispositions, or even stage some form of diversionary attack. Thousands of Home Guards were needed for traffic control duties, but there was a legal snag—Could a Home Guard, not mustered, give orders to a civilian? I never heard the answer to that one; and I don't think anyone cared very much.

Liaison with the civilian authorities was a constant difficulty. No one was sure how much one could reveal of the plan and at

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The static staffs for five Marshalling Areas only, totalled 755 officers and 17,533 other ranks. The figure rose daily. The Assistant Adjutant-General smiled grimly at these figures, and commented at one planning meeting that with drafting out of the Command continuing at the present rate it would be impossible to estimate the availability of personnel. "I suggest," he went on, "that we take the line adopted by one Army Commander of this Command who, when War Office took too many of his troops, rang them up and said, 'If you take one more man from my command I will turn South Eastern Army around from the coast and march on Whitehall'. The threat worked too."

Needless to say the Army Commander was General Montgomery!

For months we had been piling up great stocks of petrol in non-returnable tins (flimsies), in anticipation of enemy interference with normal bulk supplies. We were bursting with petrol depots, holding more than three million gallons. Then came a bombshell. It was decided to cease using the old flimsy tins, which had been the standard method of transporting petrol in the British Army since war began. The flimsy, considered wasteful of material because it could only be used once, was to be replaced by the more strongly-constructed "Jerrican", which could be used again and again. In fact, the changeover heralded a revolution in military petrol supply. Formerly all petrol was tinned in this country or at base installations in a theatre of operations, and then transported by rail and road to the battlefronts. The new system, perfected in every detail, aimed at a new level of efficiency and economy of transport. It was, in brief, to transport petrol from this country to the battlefronts by continuous pipe line. Already, in great secrecy, the pipe line had been laid across the south of England, its easternmost extremity secreted along a shingle beach within twenty-five miles of the enemy. A specially constructed flexible pipe capable of withstanding the stresses of the English Channel currents lay ready for immersion. Hundreds of prefabricated petrol installations were hidden in ships along the coast, for erection in France, to eventually tap the pipeline from England.

Special construction units stood ready to lay pipelines across France at the rate of fifteen miles a day, and thus save the necessity of transporting petrol by road or rail.

Finally, immediately behind the battlefront, tanks were to be erected, from which the Jerricans would be filled.

This was an ambitious plan—petrol pumped from Britain to Germany. Its success would govern the speed of our advance, but no one connected with this plan had any doubts about its success.

That was the eventual plan, but to us it was nothing less than a nightmare. There was no possibility of consuming the worthless stocks of flimsy petrol held by us, and there was no room to stock Jerricans. Another blow fell—each vehicle had to carry five extra Jerricans when leaving this country. We had to find a home for nearly half a million Jerricans almost at once. We requisitioned fields, and drafted in a field butchery to prepare the concrete bases, and take in the petrol. It says much for the versatility of the butchery that they offloaded and stacked two million gallons of petrol in under two weeks.

Petrol remained a problem right up to D-Day. One week we would have too much, and War Office would be worrying us to accept more trainloads, as their factories were turning it out faster than they could store it. The following week we would be begging for trainloads because formations were drinking petrol at a fabulous rate in last-minute large-scale exercises. Then just as we felt we had regulated the flow nicely, large-scale exercises stopped as though cut off by a guillotine, and we were left with two million gallons of petrol for which there was no outlet.

The Home Guard came into the picture more and more as planning advanced. Four thousand of them were trained for anti-gas duties, in case the Germans swamped our Embarkation Areas with poison gas. Three thousand were drafted into a coastal patrol organisation to give warning about any venturesome enemy patrols which might land to seek out our dispositions, or even stage some form of diversionary attack. Thousands of Home Guards were needed for traffic control duties, but there was a legal snag—Could a Home Guard, not mustered, give orders to a civilian? I never heard the answer to that one; and I don't think anyone cared very much.

Liaison with the civilian authorities was a constant difficulty. No one was sure how much one could reveal of the plan and at what stage the civilian authorities should be brought into the picture. One of the worst sufferers in Harlequin was the Petroleum Board. The sudden stepping up of R.A.F. activity had come without any warning, and petrol tankers were tearing backwards and forwards like scalded cats, day and night. One driver had been fined £5 for speeding!

The civil police had been more or less kept in the dark, and the sudden movement of large convoys in every direction had left them largely helpless.

The evacuation of civilian populations in the event of large-scale enemy bombing of towns would have been a fiasco without police assistance. A scheme had been in existence since the days of the expected enemy invasion for the rapid evacuation of civilians along certain selected routes. It was now found that these routes coincided, in places, with our major traffic routes, and a joint plan became vital.

It must not be thought that we had been unaware of these civilian problems. Far from it, but we had erred on the side of hyper-security, and it had proved to be a failure.

To set this matter right the General ordered us to prepare an all-day exercise to bring out the questions of military and civilian co-operation. Twenty-two high-ranking civilian and police officials would attend the exercise, and a joint plan would be worked out. The exercise was a great success.

The civilian authorities quickly grasped the need for a complete understanding, and set up committees which paralleled our military organisation at each level. A charter was drawn up showing at what stages the military plan could be revealed to these committees. The civilian authorities produced a charter showing the scope of their responsibilities.

Another hurdle had been crossed.

It was not always the self-evidently important matters that held the stage. Building debris came in for a brief spell of glory in a curious way. The Chief Engineer warned us that the vehicle standings would not be completed in time unless building debris (hardcore) for making the standings was made available in larger quantities. There was a pronounced shortage of hardcore, and we were having to rail it from Birmingham, which was the nearest point of supply. This appeared incredible to those of us who had built up hundreds of thousands of tons of hardcore in every open space in London, during the height of the 1940–41 blitz. It was true, however, that those piles had disappeared. A shortage of railway stock was also hampering supplies.

The issue of rum became a major controversy at an early stage, and remained unsettled to the last day. It was amusing, in some ways, yet terribly indicative of the pitfalls of detailed planning, and the difficulty of reaching unanimous agreement on seemingly simple points. What could be wrong with the issue of a noggin of rum to troops just before they went into the assault? The issue of rum immediately before an attack, in the last war, was a *sine qua non*. The medical authorities, however, have carried out exhaustive researches into the matter since then, and their considered opinion was that rum is definitely injurious when issued to men who have to carry on fighting in inclement conditions afterwards. The "medicos" said that the initial uplift from the rum is soon replaced by a corresponding loss of body heat which renders a man liable to pneumonic condition, more so than if he had had no rum. The only conditions under which rum should be issued were when men were in a state of exhaustion, and could take to bed immediately after consuming the rum. Against this scientific pronouncement the formation commanders were reduced to vocal insistence that they wanted the rum anyway. Success veered from side to side with unfailing regularity. No fewer than five different pronouncements were uttered, each contradicting the previous decision. In the end, the assault troops got their rum, by what amounted to a subterfuge!

Could military officers censor the mail of National Fire Service personnel? That was a poser. The answer was eventually in the affirmative, but it would have surprised no one if there had resulted a question in the House of Commons about the abrogation of civilian rights.

Could civilian entertainers go into Marshalling Camps? What was to be the address of Marshalling Camps? What happened to a briefed man if he went sick before the assault was launched? Would the water supply be adequate to cope with the increased military population in the very dry hinterland of Kent and Sussex? Would the already overstrained conservancy arrangements cater with the increased load?

These are half a dozen problems which rose during any single day. They totalled thousands before D-Day, and took up much more time than the major planning. Each, however, had to be gone over with a fine tooth comb. In most of them lurked some possibility of a breach of security, some slight revelation that could pinpoint D-Day.

An operation of such magnitude could not be launched on the basis of it happening some fine day in the future. There had to be some approximate period so that long-term arrangements could be made. It is only now becoming clear how closely the whole country was geared into the operation. In particular, railways threatened to become a bottleneck if last minute demands were necessary. Take food, for instance.

In mid-January War Office issued an instruction that no more normal monthly deliveries of food would be available after the end of February.

I can write about this point with some feeling, because I was on the receiving end of this message. The situation which faced me was that I did not know D-Day, I did not know how many troops I should have to feed in the next few months. Nevertheless, I had to demand and receive delivery of enough rations to tide me over D-Day.

My solution was marked with neither brilliance nor ingenuity. I sat down and worked out the worst possible fate that could befall me. I reasoned that D-Day would be in June or July. I allowed for a maximum feeding strength of 700,000 from a period earlier than our accommodation could be filled up. I then allowed for a very slow exodus. The final figure was in the region of 100,000,000 rations. This was more than the capacity of my supply depots. So I allotted sufficient rations to each depot to fill them all to the ceilings and then stack in the open under tarpaulins. That the plan worked was due to the magnificent enthusiasm of the Supply Depot commanders and their staffs; but it did work.

Rations were my own particular responsibility in the latter stage of the mounting. I had the unenviable task of putting my own plan into operation. It was easy enough to theorise on how the system would work, but it was with none too much confidence that I settled down to transcribe my last year's words into this year's actions. I recommend the course to all those who think they can write word-perfect instructions!

One of our worst problems, which threatened the whole security structure, was the changeover from Home Service rationing to Field Service rationing, without giving away D-Day.

This particular problem, common to many other aspects of the operation, will probably suffice to convince you of the complexities that had to be overcome at every step.

Normally, troops living at home are fed on what is called the Home Service Ration Scale. This ration scale includes an allowance of 2½d. per man per day in lieu of a supper element, and is granted so that units can buy various foods to give variety to the ration scale. So far so good. The 2½d. allowance must be accounted for each month. When troops are in the field they are fed on the Field Service Ration, which is complete in itself.

There is no accounting such as we know at home, and, naturally, no 2½d. allowance.

The invasion forces had to change from Home Service to Field Service rationing at some stage during the mounting; but when? The field-force troops had no wish to lose the variety they were able to create with the Home Service scale, and proposed that the changeover should be as late as possible. They felt that their troops should not be fed on Field Service scale for longer than three weeks in this country, because they would have to live for probably six weeks, on the other side, entirely on tinned food. This was a logical argument, but it raised the nightmare of security. If the force reverted to Field Service scale three weeks before D-Day, then thousands of people would be aware of this fact, and secrecy would be hopelessly prejudiced.

There was no easy way out of this quandary, but it was finally resolved by leaving the decision to each Major-General i/c Administration, at Command H.Q., this officer to nominate a suitable date for the changeover. He, of course, knew the scheduled D-Day, and could relate the change to agree, more or less, with the field-force requirements.

The change was decided at 21 April, in our case. One other command changed over on 1 April, for certain peculiar domestic reasons. When this date became known it was obvious that D-Day was not more than two months ahead.

The passage of January and February was accompanied by an increase in the tempo of activity. Probably the worst month of all was March. During this month nothing seemed to be going right. Tempers were frayed; staff officers quarrelled with each other over absurd little points. I remember having a first-class row with another officer over some point which he wanted to change and which I did not want disturbed. We were really at hammer and tongs when a third officer chose to intervene, in the friendliest possible manner. Before another five minutes had passed this officer, a Movement Control representative on the planning staff, was the subject of a vitriolic attack from both the original combatant and myself! By the time we had all calmed down, feeling much better for letting off steam, none of us could remember the original cause of the dispute.

It appears awfully silly and petty, writing in the calm afterglow, but at that time we were all reduced to a really dreadful state of nerves. Each had perfected his own part of the plan, in his own mind at least, and was unwilling to envisage changes. Close companions became noticeably more distant, and the mess was alternately a place of grim silence or hysterical tomfoolery and laughter. Forbidden to discuss planning outside our offices, we spent our social time pent up like volcanoes. After dinner, the one-time jolly messes emptied of officers, and they sought refuge in their offices until late at night. These long hours themselves produced a type of anxiety-neurosis.

Disaster followed disaster during the month. One staff officer broke down completely and had to be taken to hospital suffering from a nervous breakdown. Another officer had recurrent bouts of blindness, attributed to overstrain. Fresh discontent was piled on our miserable heads when the General called us together and said that he would tolerate no more contradictory orders being sent out from his headquarters. He said that he had had complaints from District Commanders that they had received various orders in quick succession, each contradicting the other. This he would not tolerate.

I came in for a particularly vicious attack. I was accused of having carried out reconnaissances in one district without the District H.Q. being informed, and as a result they also had carried out reconnaissances with results totally different from mine. This was not true, but my protests were unavailing, and were swamped under an even more icy attack on another officer.

In my pocket I had a letter from my Brigadier, at the War Office, saying that my administrative instruction on Supply and Transport Services was the finest he had seen in this war or the last. The warm glow I had felt on receiving this was gone under this new buffeting.

The overall position was excruciating. Months of work had gone into the preparation of various administrative instructions, which we irreligiously termed "bibles", and we should have been settling down to a period of comparative inactivity. Instead, we were snowed under by a series of orders and instructions, often emanating from bodies unknown to us. The War Office joined the paper manufacturers.

In retrospect it is simple to see what was happening. Our own plans completed, they had gone to War Office, who had attempted to co-ordinate them for transmission to the Allied Expeditionary Force H.Q., and other interested organisations. Unfortunately, the War Office Instructions were not always in precise accord with our own. Sometimes it was imperfect interpretation by War Office of our instructions. At other times it proved to be that we had failed to interpret the original War Office charter as they had intended.

The Expeditionary Force, joint American and British, hid its identity under the title of COSSAC (Chiefs of Staff, Allied

Expeditionary Force), as yet without a Supreme Commander, but played an increasingly important part in the planning. Frequently we had to clarify or amend their instructions.

It was really a time of dissemination of information, and discrepancies in interpretation were not surprising. They were still painful, and were responsible for much of the alleged passage of contradictory orders.

Probably the crowning blow of the period was the Expeditionary Force concentration plan. It took not the slightest notice of our months of work preparing an accommodation schedule. Hundreds of hours had been spent on this work, miles of paper had been filled with accommodation details. The Force plan destroyed every atom of that work. We were back at the beginning. The air in the accommodation section was blue with language, and later with smoke from the endless cigarettes smoked through both day and night, as officers and clerical staff slogged through a completely new disposition of accommodation. Work had to be arranged in shifts so that the work never stopped for a single moment. The duplicating machines thumped out new masses of tables. In seven days a new schedule was born. Then followed endless conferences between all concerned, until even the new schedule was altered beyond recognition. Again the duplicators thundered and yet a third schedule was conceived. This time it was acceptable in most respects.

Movement Control, with a wicked smile barely suppressed, pointed out that certain camps were outside the scheduled waterproofing limit from Embarkation Areas, and consequently must be scrapped. The point was a fine one, but they were right, and the camps had to go. Already we had had one enormous scare about the Marshalling Camps. We were told to prepare all camps on the basis that any one might be used for briefing. This meant that nearly 50 per cent of our existing camps had to be replanned. Many were in or adjacent to towns, and the only choice was to evacuate the civilian population or clear out ourselves, as it was not possible to seal off part of a town. We cleared out.

Around this time rumours of secret weapons began to circulate. These, coupled with a highly secret plan for the deployment of anti-aircraft guns, added a new anxiety to everything else. We could find out no concrete facts about these secret weapons, but the extent of our precautions was sufficient augury of the possible seriousness of the threat.

A touch of humour was added when the Assistant-Adjutant-General dryly commented at a planning meeting that security was very bad, and the use of the code word was much too prevalent.

"In fact, I have no doubt the first batch of planning staff officers' children are already being christened———," he added.

Internecine warfare, even if controlled, reached a new level of keenness. The General Staff raised wry smiles by suggesting that they should be informed of the proposed accommodation of units coming into concentration areas, as one unit had been found housed in the middle of one prohibited area. Enough said —Round one to the General Staff.

Round Two—Q Staff accused the General Staff of laying out their defences so that troops had to be accommodated in Embarkation Areas already well known to be over-full. Honours easy.

The Chief Engineer joined the warriors. He had found County Council road repair gangs tearing up one of the main movement routes! Consternation and tightening up of liaison on this point.

The Marshalling Area camp staffs were due to take up their duties during the last week of March. April 1st was still the target date for completion of our preparations. During the second week in March I would not have given a fig for our chances of being ready in time. The General had different ideas, and merely remarked to a doubter, "I say we *will* be ready in time." He was right, for when the 1st of April dawned every camp was staffed, every installation was in place, and as far as we were concerned the invasion could have taken place the very next day.

While all these domestic problems were being settled the machine was working, and concentration taking place, quietly but satisfactorily. The victims were pouring into the sausage machine in thousands, but the reception arrangements were not considered satisfactory. The General made a "pep" tour of the Districts, and forcibly demanded that *every* unit would be met by a representative of the District H.Q., who would personally ensure that everything was in order, and that the unit had everything it wanted.

This was service—with or without a smile. The units literally purred with contentment, and made the most fabulous demands.

Next came the issue of the Expeditionary Force Preparatory Order—Part I. This was an explicitly-worded document issued to each unit, giving them clear instructions on how to wind up their affairs in this country. When they had complied with these orders the units would be ready for the move overseas.

But do not think that the matter ended there. With that marked individualism—so charming to watch, so painful to suffer—which is said to be characteristic of the British race, unit commanders vied with each other to stick to the spirit but avoid the facts of the orders. One formation slipped through a demand for hundreds of tons of Foot Powder, thousands of gallons of Disinfectant, and a long list of other medicaments. The fact that they had received specific orders to the effect that these would be issued on the other side did not deter them one iota. Officers descended on installations like plagues of locusts, swathed in disarming smiles, begging, demanding, threatening, and all with one purpose—insurance against a rainy day.

I have no doubt that many units amassed a good reserve through these practices, but the majority went away empty handed. The difficulty that all these applications raised was that the telephone bells never ceased ringing, as anxious installation commanders inquired whether this or that unit was entitled to this or that piece of equipment or not. Time was wasted to an enormous degree through these malpractices, but a great degree of tolerance was exhibited.

The worst sufferers were the Royal Army Ordnance Corps (R.A.O.C.). Already their problem had reached truly gigantic proportions. When units began moving to Concentration areas the whole system of normal deliveries was shattered. Equipment was following units from one end of the country to the other, taking up valuable rail and road space. In desperation Ordnance cancelled all outstanding demands and instructed units to resubmit their requirements. A night and day rush followed, and equipment began to flow out of the Central Ordnance Depots in great streams, all pointing southwards. The scheme worked well, but it became obvious that, even then, the completion of all units would not be possible. As a last resort a special ordnance depot was opened near the Marshalling Areas, into which poured every conceivable type of stores and equipment. The staff began at a meagre six. Within a month it had expanded to more than a hundred, and units were being served with their equipment up to the very last moment. The classic example was when one assault brigade had equipment delivered at the port just as they were sailing.

"Nothing must be spared." That was the motto. Nothing was spared in effort, certainly. We entered the last anxious days almost out on our feet, worrying ceaselessly over details that would have made us laugh a few months earlier. Laugh? There were times when we almost forgot what laughter meant. On and on rolled the question marks. Day and night rang the telephone bell.

The organisation was on the ground, anyway. For better or worse we were committed to our plan. It was unalterable except in minor detail. Still the scares continued. A last-minute demand for a lying-up camp almost laid us low, but it was ready in time. Everything was desperately short. We had no reserve of labour, tentage had been exhausted, accommodation was full to overcrowding, cooks were still insufficient, camp commandants were constantly appealing for staffs. Altogether there was not a stitch of sail to spare . . . and overall, locked in our safes, were the plans to counter the enemy's vaunted secret weapon, but we dared not imagine what would happen if the weapon was launched before D-Day.

By mid-April the worst was over. The consistent queries had died down to a mere trickle. The planners had earned their rest. Others had taken up the ball; the organisation was bedding down.

Reading through these words I feel them to be altogether inadequate to express the devotion to duty shown by those officers and men of lower formation headquarters who had to make our plan work. While our task had not been easy, how much more difficult had their task been.

The strain on such organizations as N.A.A.F.I. had been immense. They never failed us. Surely they must have thought we had reached the last stage of unreason when we complained that there was a shortage of beer in certain camps, or that the proportion of tobacco to cigarettes was not satisfactory. The fact that N.A.A.F.I. had to produce three times as much bacon as normal, month after month, had to dispose of large excess butter stocks because we no longer consumed butter, rearrange all their offal arrangements, nearly lost their reason trying to provide fresh vegetables for double the normal military population when the local produce buyers had no resources remaining, appeared to have been lost sight of when we produced our pin-pricking complaints. We had not forgotten, but their best efforts had to be bettered in those days. We had no time for praise or satisfaction, when every day produced some tiny flaw that required correction.

No body of officials were more deeply involved than the Petroleum Board. Their tanker service worked miracles. Their efficiency and co-operation was beyond praise. Yet, always we asked more. Always we wanted perfection bettered. If they hated us for our arrogance and truculence I do not blame them; in fact, I know they had a sense of urgency as keen as, or keener than, our own.

Now, I feel it necessary to say a few words about our American Allies.

CHAPTER VIII

INTERMISSION

AMERICAN MEDLEY

WE LEFT THE American forces filtering into this country during the dark days of 1942. We must take up the story from there.

During 1943 large areas of Britain were occupied by the American Armies destined to take part in the invasion. They were mainly located in the western and southern parts of the country, but units were located in all parts of the country to some degree.

After the initial trying period, during which an understanding was reached by the two military forces, the Americans began to set up their invasion organisation in the same way as I have described our own.

The differences were minor ones, such as dietary, a different name for a certain official, a different system of internal administration and documentation. In general, the two armies were one. We were taught to think that way, and we soon began to act that way.

The invasion lay-out was *one* lay-out, even though it was technically divided into zones. In the far west there was the United States zone, which was designed to deal with United States troops only. This area was staffed entirely by Americans. In the centre there was a joint British-United States zone, which was designed to pass through British and American troops alternately. Joint British-American staffs were provided. In the east there was the British zone, designed for British, Canadian and other Allied forces only.

It cannot be emphasised too greatly, however, that the division into zones was purely for the simplification of the administrative machine; one area was the same as another.

In the American zone the Americans showed a great ability for administration. We envied them their freedom from governmental and financial restriction. We admired their direct approach to a problem.

If they wanted a new road, they said: "We're gonna build a road from here to there—and it's gonna be straight." This, I might add, with half an eye cocked at the winding, narrow Cornish roads, which never ceased to amaze them.

And having said they were "gonna" build a road, they built it. They built it quickly, and they built it well.

In our joint planning conferences they were always alert and keen-minded, quick to seize on a flaw, always looking for a more direct way of doing things. They cut the corners off the British windings, and they frequently came unstuck because of it. Sometimes they scored a bull's-eye, and they were full of glee. They liked pulling one out of the bag at our expense. They did it gracefully, and we all laughed.

One thing they seized on with both hands—the Battle School. They took over a large area of the west country, evacuated the civilians, and got down to playing at war. They played hard and long. They did their best to outdo anything we had conceived in the way of battle training. They showed that, given an opening, they would be away like a ding-bat, and very little would hold them back. They didn't like sitting still. They wanted to start moving and keep moving. In France they showed just how fast they could move—faster, in fact, than any army has ever moved before, in comparable conditions. They learnt the blitz tactics in Devon and Cornwall, sleepiest of our native counties I know; I live there.

During these months of waiting, planning and training, the Americans invented magnificent new equipment. Nothing was quite good enough. Their restlessness took on the shape of a Grand Inquisitor. They probed every crevice of their machine and uprooted indiscriminately, without regard to custom or legend.

Their food packs were an outstanding example of their untiring research. They invented a ten-men pack, probably the most expensive of its kind in the world. It was magnificently packed to preserve its quality. The food was tantalisingly good. Most sought after delicacies were the tinned pork and egg rations, tinned butter, luscious chocolate and fruit bars, and other delicacies strange to the English palate. One and all agreed on the quality of this production, but it was not suitable for the British soldier. There were no stewed steak and kidney puddings, no carrots and other vegetables, no boiled puddings. Our men liked the food as a change, but reverted to their own peculiar packs as soon as they could. It is a profound difference of appetite, a curious little sidelight in the amalgamation of two armies.

Well, these few notes on our American allies are all that I can find to say in differentiation from our own troops. There was only *one* plan and *one* army. What I have said of our own soldiers applies equally to the Americans who worked side by side throughout the two years.

CHAPTER IX

ACT III—DENOUEMENT

THE INVASION IS LAUNCHED

TENSION ALMOST STRANGLED us during April. The sudden switch to comparative inactivity reacted upon us even worse than the mad rushing it had replaced.

Then, from the blue, came a heaven-sent outlet—a full-scale rehearsal by the assault troops scheduled to carry out the real assault. The whole drill of marshalling, briefing, sealing the camps, movement to Embarkation Areas, embarkation, sailing, and as a last titbit a landing farther along the coast so that the troops could fight a mock battle on the South Downs.

Naturally, it was not without complications. Nothing ever planned was without repercussions. This time we had to go into lengthy conference on the problem of moving our new, highly-secret equipment through towns and villages on the way to embarkation. If the exercise was to be a real test of the actual assault, then we had to embark the actual equipment, but it was undesirable that this should be on show to the general public, in case information leaked out to the enemy.

What to do? The only apparent solution was to evacuate civilians from the Embarkation Areas to a depth of 1,000 yards. This proposal was put forward by Supreme Headquarters, but met with no great favour. The plan meant the evacuation of thousands of civilians from one town alone. Finally, it was decided to hold back the most secret equipment and use training vehicles in lieu.

Simultaneously with the exercise plans, the real thing moved to its conclusion. One million men disappeared from human ken under the non-committal address "Army Post Office, England". We received an order to prepare a camp for refugees to be evacuated from the bridgehead if sufficient expansion was not attained in the first thirty days. The general policy was not to evacuate any civilians to this country, but circumstances might demand a reversal of the policy, and we had to set up a camp to hold 6,000 refugees at any one time. This was a much more difficult proposition than it first appeared. Our intelligence branch considered that at least 10 per cent of the refugees would be enemy agents, accepting this heaven-presented opportunity of entering this country. Extreme care had to be taken to prevent the introduction of typhus or other epidemics. Camps were divided into "dirty" and "clean". The refugees having arrived in landing craft, were to be transferred to "dirty" buses and taken to the "dirty" camps. After a thorough cleaning-up, and examination by security officials, the refugees were to be moved in "clean" buses to the "clean" camps, pending their removal to accommodation elsewhere. (It might be interesting to note, here, that the earmarking of this accommodation was responsible for much of the outcry which occurred when flying bombs were rendering Londoners homeless, and accommodation was being kept empty by the authorities. It was obviously not possible to tell the public why this was so. Perhaps the explanation might provide some balm now.)

One of the least soluble difficulties was to provide an adequate ration scale for these refugees. I well remember attending a meeting at which civilian representatives, including leaders of the W.V.S., were present. We discussed the question of diet at great length. With commendable kindliness the W.V.S. representatives considered that the diet should consist mainly of scrambled eggs! They had reasoned that the refugees would be half-starved, unable to digest heavy meat foods, and generally in the condition requiring semi-invalid treatment. Memories of half-starved Europeans, under the heel of the Nazis, were redolent. The care of children was a special concern.

At last we agreed on a ration scale not unlike our own military scale, but including less heavy meat foods. Special baby foods were to be provided by the Ministry of Food.

I have left the sequel to this meeting to the next chapter.

Work on the construction of the camp began at once.

Loud laughter, and a general raising of morale followed the receipt of an instruction from War Office that the *dismounting* of the operational machine would be discussed at War Office next week. We had become so immersed in our planning that the question of it ever being completed never entered our minds. This touch of forward planning revived our balance somewhat.

D-Day for the exercise was the 3rd of May. Marshalling began on the 26th of April, and the fun followed quickly after. By an unfortunate accident half of the available Marshalling Area transport was inside the camps when they were sealed. The transport took no further part in the exercise. A Catering Officer overstayed his welcome and found himself sealed in a camp for the next seven days. The security control worked perfectly. In fact, it was too perfect, because one Commandant was locked out of his own camp, and the Divisional Commander of one of the assault brigades could not get into the camp to watch the process of briefing! Meanwhile the embarkation points were filling up with landing craft. Naval craft moved to their covering stations. There was a pronounced increase in fighter aircraft activity. Fighter airstrips, unoccupied since the previous summer, began to fill up again.

On the 30th of April the camps were unsealed. The troops began to move forward to the embarkation points. I had never seen such equipment. Much of it was entirely new, and some weird contraptions rolled seawards on their last lap before embarkation.

Next day, I watched the loading of craft. The plan to load sea-passage rations, voyage blankets and other stores before the troops and vehicles arrived for embarkation did not appear to be working well. It seemed that the embarkation staffs were trying to set up a new time record for embarkation. The hards were a hive of activity. One man, trundling down the hard with his little barrow full of rations, was knocked for six by a lorry reversing on to the craft. Another barrow-monger lost control, and the barrow hurtled straight into the water, rations included. Generally, though, embarkation proceeded smoothly! You will remember the incident of the tank that got stuck on the landing craft ramp, which gave us such heartburn, so there is need to recount that incident again.

Loading continued on the following day. D-Day was to have been on the 3rd of May, but it was postponed for twenty-four hours. There was no apparent reason for the postponement, except to test out conditions, as everyone was loaded and ready to go by the afternoon of the 2nd.

Late at night the cavalcade of craft moved away from their moorings and made rendezvous with the naval escort. When the 4th of May dawned, the sea was covered with the small grey landing craft, while larger naval vessels, cruisers, destroyers and corvettes, screened the seaward side of the convoy. The air was alive with aircraft. Slowly the convoy turned westwards, heading for the bays where the troops would land at dawn the following morning—the last rehearsal before the curtain rose. Next time the convoy sailed it would turn eastwards.

The next few days were spent in examination of the way the exercise had worked. There had been quite a number of snags, some of them beyond any possible planning staff's capacity to anticipate. There was the trouble over waterproofing in the Marshalling Area camps. This task occupied sixteen hours, and the vehicle drivers had to do their share. The R.E.M.E. waterproofing crews reported, however, that they could not keep the drivers at work because of the plethora of E.N.S.A. shows, films, and meals *ad lib.* The men disappeared like greased lightning, as soon as they parked their vehicles. This was hotel service with a vengeance—the service was too good!

R.E.M.E. had several more complaints. Many vehicles were seriously overloaded. This was not only a danger to the vehicle but the loads had to be removed before waterproofing could be completed. More vehicles spares were required at Recovery Posts.

Some congestion occurred at Embarkation Areas through the civilian traffic diversions being too close to the actual embarkation point, and the diversions had to be moved back about a mile.

One tank arrived with an upright piano strapped across the rear! When the tank reached the embarkation point the crew was ordered to remove the piano. The crew was mortified, because they had carried this self-same piano across Africa, through Sicily and Italy, and then brought it home. They had no intention of surrendering it at this stage, but meekly left it behind for the moment. I say, for the moment, because they did succeed in getting their piano across the Channel in the end. How they did it is their secret; when last heard of it was back on its old tank travelling through France.

Thus ended the final exercise. Once again the plan had worked. The adjustments to be made were minor ones.

Back to the real course for the final gallop. Ambulance trains entered the news. These had been stabled at strategic points ready to rush to ports of disembarkation to receive the wounded, when required. I made a quick tour round the stabling points, and found most trains had settled in well. One, however, had been located at a siding without water, and the train was making a twelve-miles trip daily to replenish water. Negotiations with the railway company put that right. The trains were a mixture of military and civil. The civil trains had been through every big blitz since 1940. The crews were right on their toes after a long period of inactivity.

Concentration was completed during the remaining days of May. On the 28th the last planning meeting was held. We had attended 147 planning meetings since June, 1943.

The General called us together for a last talk. "The work is done," he said. "We are committed to our plan. There must be no relaxation. Offices must be manned by officers capable of giving an immediate answer to any problem, every second of every day. Very soon we must expect to see our plan in operation."

It was hard to realise that we had finished our work. The planners went quiet and retired within their own thoughts. Even the telephone seemed to have joined the conspiracy. It rang only occasionally, and the old imperative ring seemed to have gone.

Suddenly, there was a bustle of field-force officers in and out of the headquarters. High ranking officers, from 21 Army Group, Canadian Army and Second Army, came and went. All looked serious. Smiles were rare, even when saying good-bye. Ex-staff officers, who had returned to regimental duty with the invasion forces, drifted casually into our messes for a farewell drink. No one mentioned farewell, however, and drinks gone, only the unusual firmness of the handshake told the story behind the eyes.

We felt irrevocably committed, and this idleness was hard to bear. Rumours began to circulate that camps were being sealed. An order was issued that only the highest ranking staff officers would be allowed to visit Marshalling and Embarkation Areas until further orders. The Movement Control offices were placed out of bounds.

Tents covered the lawn around the Movement Control building. The click of typewriters and the louder whirr of duplicators could be heard through the open windows. The Movement Control staff rarely appeared for meals, and when they did, looked hopelessly tired and worn out. Officers could be seen flitting between the buildings and tents. In those tents they snatched a few hours' sleep when time permitted. The staff worked endlessly, divided into three eight-hour shifts in theory, but most of the staff worked twelve hours a day with the overlap; and the fate of hundreds of thousands of soldiers poured steadily from the incessantly chattering machines. All through the night the whirr went on, while we turned restlessly in our office-bedrooms, waiting . . . waiting . . . waiting.

News came through that more camps were sealed. Each day we expected to see the all-important teleprint message which would give the signal to go. Each time the clerks entered with a batch of teleprints we snatched at them and scanned them eagerly for the vital message.

June arrived. The blossoms were full. The birds trilled their songs in the woodland around the offices. The 3rd of June dawned and the air was live with a new expectancy. The idle telephones came to life. Inquiries flooded upwards from the districts. We knew, then, that the briefing was over. The boats and craft were loading, because inquiries were all about certain problems arising at the hards and berths.

Still no message.

It was in the early hours of 4th of June that the night duty clerk wakened me and handed me a teleprint. I opened it. The message had arrived. D-Day was to-morrow—the 5th of June. The Army Signals were flashing this message across the length and breadth of England. I could sleep no more that night. I determined to visit the coast and see the show through.

Then came the anticlimax. In the afternoon a second message cancelled the notification of D-Day. Was the show off? Was there trouble? Had the plan fallen down? The weather showed indications of worsening, and the barometer began to fall.

At ten o'clock that night a new message arrived. It was on again. There was a twenty-four hours postponement, and D-Day was now the 6th of June.

Each time I read the message I thought what a silly message to decide the fate of the world for a thousand years, to use a Hitlerite expression. Here is the message:

> "Reference movement instructions issued for movement 5 June subsequently postponed by our message QM PW of 041415. Road and rail parties will now move 6 June same times and routes. All informed."

Convert this message into facts . . . The craft were filled and waiting to go. In the hinterland the build-up troops were already journeying to Marshalling Areas. The sausage machine was working!

What an endless day was the 5th of June. I ripped open message after message, expecting each one to say that there was a further postponement. The glass had fallen more during the day. Night came and there was no postponement. Dinner was a quiet meal. We all knew that we all knew, but no one spoke to his neighbour.

This was a sacred moment; a moment of pure history. But what would to-morrow bring? Outside the wind rose and swung ominously through the trees. The R.A.F. meteorologist, usually in much demand for weather forecasts about the next day, found himself strangely alone. No one asked about the weather.

After dinner I strolled along to the "met." office, and found the clerks plotting the tell-tale statistics, which, when co-ordinated would give an accurate forecast of to-morrow's weather. I watched the plotting for a good while, but something prevented me from asking what the trend of the weather appeared to be.

The headquarters lay snuggled beneath a heavily-wooded ridge, not many miles from London. I wound my way upwards through the trees and stood on the crest of the ridge, the lovely land of Surrey stretching southwards into the evening dusk. Overhead, the wind was silenced suddenly by the sound of approaching planes. The sound grew from a distant drone to a deep roar and as the searchlights flickered the shadows of aircraft and gliders crossed eastwards, bound for France. In the aircraft and gliders were our airborne forces. At that moment almost every searchlight in Britain was specially deployed for this operation. The searchlights had been sited to form a beacon path down the spine of Britain. Down this path of light the craft and gliders had come to assemble above Salisbury Plain, itself marked with a giant circle of stationary lights. While the airborne forces winged their way to France, the naval forces were assembling in the night off the south coast, and the landing craft were stealing out of their harbours on their sea journey.

I stayed a long time on the hill, and then went home to sleep. It was difficult to rest, as images of the invasion flashed across the mind. . . . I awoke to hear my billettor telling me that the invasion had been launched. The quiet voice of a wireless announcer was giving the news in one sentence.

I hurried to the coast to see the streaming lines of ships and craft pounding steadily along the English Channel. Here on the white cliffs, with the grey-crested waves lapping the shore, I stood and cried, and was not ashamed. There was no reality in this scene.

Had I shared the planning that this might happen? Were these real ships? Was I dreaming?

The pent-up emotions of months surged through. I cried, with my head in my hands, a spectator of destiny . . . the planning was ended.

CHAPTER X

FINALE—THE CURTAIN FALLS

EVENTS AFTER D-DAY

THE FOCUS OF interest moved to the Normandy beaches. Our first flush of excitement on D-Day was quickly replaced by the realisation that this was not the end of our problems, but only the beginning. Movement Control were immersed in their greatest task ever. For the first three days movement went like clockwork.

Then came the worsening weather, already unpleasant enough to have raised half-thoughts about a further postponement of D-Day. Stores movement was held up, but troops continued to be landed in the worst weather conditions. The rate had to be reduced and each alteration meant hundreds of amendments to the movement tables. Gradually the weather improved, and the planned movement returned to schedule.

The decision to sail on the 6th of June was a miraculously lucky decision. My heart went cold when I thought of the consequences another day's postponement would have brought upon our heads. Had the assault taken place on the 7th of June the follow-up would have been severely handicapped, might not even have been able to land with full equipment, and the whole operation would have been prejudiced, probably beyond recovery! Whether the assault forces could have maintained their bridgehead without reinforcements, until the weather improved, is a matter for conjecture. One thing we do know, they were not intended to hold the line for such a period.

However, the extra day was granted to us, and success attained.

Humorous incidents abounded on both sides of the Channel. Two incidents in lighter vein occurred at home on D-Day.

There was the case of the traffic-minded unit commander who telephoned Movement Control to say that his convoy was unable to proceed as detailed owing to mechanical trouble. He was instructed to wait until Movement Control could fit him into their movement programme. Five hours later the unit commander telephoned again, his convoy ready, anxious to get moving. Movement Control checked his convoy serial number and discovered that the convoy consisted of the unit commander, his batman, and his car!

At two o'clock in the afternoon on D-Day an agitated unit commander telephoned Movement Control.

"I say", he shouted, "I should have landed in France at H plus 30 (half an hour after zero hour), and I'm still in Sussex. What's the idea?" He had heard about the invasion over the wireless in the morning, and had spent several hours finding out where Movement Control were located. This rude and uncompromising officer, together with his unit of seven other ranks, was shipped off to France that night, insisting that he had been done out of the thrill of his life!

There was also the case of the too-security-minded medical officer, who was in command of a General Hospital. The hospital was ordered to port in the normal course of things, but failed to arrive. Inquiries revealed that the medical officer had received his orders all right, but as they were all marked "Top Secret" he had locked them away in his security box—unopened. The officer's explanation was that as all the instructions were marked "Top Secret" he thought he had to keep them sealed until he received an instruction to open them!

The refugee camp, capacity 6,000, you will recall, was all keyed up from D-Day. The staff numbered 3,000. Their only haul in the way of refugees was one Norman peasant and his goat. I will not vouch for this story, because I did not see the peasant or his goat, but the tale gained considerable credence.

As we heard it, the Norman peasant was wakened by the sound of naval gunfire. The shells fell around his cottage and he fled. He finally emerged on the beaches, where he was pushed aboard a landing craft and brought to this country.

A great deal of labour was expended finding an interpreter who could speak the Norman dialect, and when cross-examined the peasant said that he did not understand how he came to bring the goat. It must have been the awful explosions, because he was half-way to this country before he realised that he had not brought his wife, but his goat!

Whether this story is true or not I cannot say. What is certain, however, is that the refugee camp either had the Norman peasant and his goat as their customers or they had no customers at all, for no evacuation of French civilians was necessary.

Less funny was the enemy's reaction to our assault. On the 8th of June Maidstone was heavily shelled by long-range guns. Maidstône represented the greatest bottleneck in our movement circuits. Whether the enemy realised this or not we did not know. Fortunately the vital bridge running through the centre of this Kentish town was intact after the attack. There was a lull, after this single attack, until ten o'clock on Thursday night (the 15th of June). At that moment the first flying bombs raced across London.

Next morning I saw my first flying bomb. It scurried past the office window, less than a thousand feet high, and nose-dived into the quarry next to one of our main supply depots, less than a mile away. Three more flying bombs crashed in the neighbourhood during the day.

In the afternoon a hurried conference was held to implement operation Diver—the anti-aircraft deployment against the flying bombs. The story of Diver has been told in newspapers, and even in films, so there is no need for me to elaborate the known facts here.

It gave us a shock, though. For two or three days even the invasion took a back place in our minds. Every hand was turned towards preparing the anti-aircraft guns for their unusual role. Then the R.A.F. began their deployment of balloons. Thirty thousand personnel were involved hauling down the balloons in London and other parts of the country, and rushing them into Kent and Sussex.

Bad news from Normandy on the 19th and 20th of June. The weather was seriously interfering with unloading. One of the artificial ports was badly damaged by the storm. Many men lost their lives. The flying bombs were making landfall at the rate of about 150 each day. The anti-aircraft gunners were baffled by the difficulty of the target. New equipment was needed. It was flown from America, and the equipment adjusted. The R.A.F. stood in the breach. The Spitfire was not a success against the flying bomb, but the available squadrons of Tempests were playing havoc with them.

The list of casualties grew, however. A military bakery was totally destroyed. A supply depot was damaged. Two barracks were hit. The only railway line to one port of embarkation was severed for twenty-four hours. One district headquarters received two direct hits and had to reopen in another area.

My billet was rendered uninhabitable by one flying bomb which totally demolished the billets of two other members of the planning staff. No one was killed.

But the attack was too late to affect the invasion. The build-up progressed steadily, against all odds, and soon the flying bomb sites were captured, and the southerly attacks ceased. It was bad enough while it lasted. Movement Control hesitate to say what would have happened if the attacks had preceded D-Day and been launched on a heavier scale.

There is no doubt that the flying bombs were primarily to be used against the invasion forces. I am convinced the Germans intended to submerge our south coast ports beneath a welter of flying bombs, and thus destroy our invasion plans. Their plan failed, but only by a split second of time.

While the flying bombs destroyed English homes the invasion forces in Normandy were developing one of the most ambitious military plans in history. This plan was to envelop the bulk of the German armies in the Falaise pocket, and exterminate them, leaving our forces a clear run through France into Germany.

Half a million men was the gigantic prize hanging before the eyes of General Montgomery as he manœuvred his forces around Falaise. The Falaise victory was no mere chance occurrence grasped by an opportunist soldier; it was carefully planned, and full details explained to the headquarters staff several days beforehand. In one of those stirring announcements which preceded every major battle fought by General Montgomery, he told his staff: "We will wipe out the German army in France in one stroke. The battle of France will be won on the beaches of Normandy."

Accordingly, General Montgomery made his plans. But, once committed, he found that the Canadians could make no progress. They were firmly pinned down by the Germans, and the mouth of the pocket remained wide open.

The picture that confronted the Allied Commander was of the German armies pulling out of the Falaise trap, and fighting a delaying action across the breadth of France. It was a terrible thought to one who had success almost within his grasp. Daily he expected to hear that the Germans were pulling out from the pocket. He gave orders for the alternative plan to be put into operation. This was an assault crossing of the River Seine, a highly technical and dangerous operation that bore no relation to the crossings eventually made, when the enemy were already in flight. This was to be a full assault crossing against an undefeated enemy.

Then an amazing change came across the scene. Instead of drawing out from the sinister pocket, the Germans were piling in reinforcements! The German press and wireless were screaming to the German people and the world. Our armies will drive the Allies into the sea. Not one inch of ground will we give. Not one British or American soldier will remain on the soil of France except he be dead or a prisoner.

As the German divisions forced their way through the Falaise gap, General Montgomery smiled for the first time for many days, and ordered the American forces around Avranches to ease back and make room for the Germans coming in!

The Commander of one German armoured division, moving up from the south, explained in a message to his army commander that they had been unable to reach their rendezvous at the appointed time, owing to incessant R.A.F. bombing, but they would arrive next day! Having intercepted this message, we obligingly made way for him and his armoured division, and they had a much more peaceful trip into the trap!

At last the trap was set, the bag full. General Montgomery gave orders for the American armoured forces to begin their enveloping movements. Out broke the American columns, cutting straight across the German supply lines. The British and Canadians pressed tighter and tighter, until the mouth of the trap snapped shut. The German armies were in the bag! The battle of France was won, the battle of Germany begun.

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